The Builder.

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Opening of the International Exhibition.

ON MONDAY last the third of the series of ten annual exhibitions planned by Her Majesty's Commissioners for the Exhibition of 1851, was opened under favourable auspices as regards weather and other influences. The three days preceding Easter Monday were characterised by dull leaden skies and piercing winds, but on Sunday night the clouds lifted, and Monday morning dawned with an azure dome, flecked only by fleecy clouds that were highly ornamental, and the reverse of threatening. It might have been supposed that the unusual brightness, pleasantness, and hopeful promise of the morning would divert many visitors from the in-door attractions of the Exhibition who might have resorted to it under less summery circumstances, but this does not seem to have been the case. Probably the fact is that the fine day turned out a grand maximum of pleasure-seekers. The lovers of *al fresco* entertainments and enjoyments had abundant opportunities for the gratification of their tastes; but, however this may be, the Commissioners, General Scott, and his staff may be congratulated upon the successful opening of an interesting, and, we may suppose, attractive collection, the number of visitors being, in so far as we could learn, considerably in excess of what they have been on the opening day of either of the two preceding Exhibitions. There was no ceremonial to attract a crowd, fashionable or otherwise; the doors were thrown open simply, and the public admitted to judge of the Exhibition on its merits: they came by thousands, and pronounced a favourable verdict that will be endorsed daily between now and the end of October next, when the Exhibition will close.

It is quite well known that all has not been plain sailing in these Exhibitions as between the Commissioners and the exhibitors, and the annual collections have been attacked by some detractors. They have been pronounced failures as regards specialties, but this must be held to be at least an open question. It may be admitted that last year, when cotton manufacturing processes were a specialty, and this year, when silk manufacture has its turn, the exhibits in the machinery-in-motion department, as illustrating these important branches of our national industries, are inadequate, if the magnitude of these interests are taken into consideration. This also, however, must be admitted, that even the limited display of machinery of last year in cotton manufactures, and of silk manufacturing machines this year, was and is sufficient to show fairly, and with passable completeness, the *rationale* of the two processes. This much is indisputable, that last year the display of products of the cotton manufacture, and this year of the silk fabrics and productions, ancient and modern, may be regarded as completely successful expositions.

But the specialties of this year's Exhibition include, in addition to silk and silk manufactures, food, drinks, and their preparation, also cookery and coaches.

Visitors on the opening-day followed, of course, their own tastes, but reached the objects that interested them under difficulties, from having to master the contents of an official catalogue of nearly 200 pages, first accessible on their entering the Exhibition.

The exhibits of distinct classes are not,—for good reasons, doubtless,—placed very compactly, and this remark applies especially to the carriages, which, occupying much space, are distributed in various localities, at a considerable distance from each other; as, for instance, in the east and west arcades, the French supplementary court, and other rooms. There can be no question that the display of spring carriages, ancient and modern, in State coaches of the Sovereign, of the Lord Mayor, of the Speaker of the House of Commons, and of numerous other official personages, and of modern vehicles, is very full and rich. These last include drags, landaus, broughams, phaëtons, Victorias, and other carriages of the park character; with a profusion of shooting-carts, dog-carts, gigs, Norwich and Alexandra cars, cosy carts, and an endless variety of other vehicles. In addition to these more imposing exhibits, there is a profuse display of spring-carts, wagons, brewers' drays, town vans, and even of trolleys, wheelbarrows, perambulators, and velocipedes, two, three, and four wheeled. The models of old mail-coaches, and the actual mail-coaches that were run off the road by the railways, are peculiarly interesting objects. One of the most important departments of this display, and destined, probably, to produce important results as affecting the comforts of street locomotion, is the exhibition of improved Hansom-cabs, in the east arcade. The exhibitors include,—Messrs. Edwards & Sons, of Cardiff; James Evans, of Liverpool; Forder & Co., of Wolverhampton; J. C. King, of Camden-town; G. Huband, of Regent's Park; J. Lambert, of Great Queen-street; T. H. Lewis, of Regent's Park; J. Marston & Co., of Birmingham; Standfield & Crosse, of Exeter; Wm. Stoneham, of Seymour-street, Euston-square; Turton & Rogers, of Leeds; and B. Ward, of Lamb's Conduit-street. The prices of the improved cabs have as wide a range as from 30 to 100 guineas. Without attempted enumeration of particular examples, it may be said truthfully of the abundant display of modern spring-carriages,—the finest ever brought together,—that they afford conclusive and satisfactory evidence of the high degree of excellence and proficiency that has been attained in body-making, smith work, wheel-making, trimming, painting, and all branches of the coachmaker's trade: so far as the art goes, there is something yet to be done.

Next to coaches, cookery and cooking appliances enlisted popular attention. The major portion of the kitchen ranges shown are in the South Gallery, Room XXIII., but there are also some interesting objects far removed from these in the iron annexe adjoining Room XII., at the entrance to the School of Practical Cookery. There are fifty exhibitors in this class, some of them showing a large variety of objects, the whole embracing coal and gas cooking-stoves and ranges, fixed and portable; stoves for roasting, baking, boiling, broiling, grilling, and toasting; hospital, workhouse, and barrack cooking apparatus; cottagers' and emigrants' stoves and fittings; cooking apparatus for petroleum oil fuel; Naphtha cooking-stoves; Field kitcheners; married soldiers' ranges, and ship's cooking apparatus; hot-air ovens and chambers; fire-trough field cooking apparatus for campaign service; self-acting roasting machines; portable sub-fire ovens; hot plates; and a great variety of other objects, almost all interesting at any time, but that would have been especially so a month since, before the demand for coal abated, and its price fell.

In the theatre of practical cookery that has been fitted up in the east machinery annexe, where the Walter printing-machine used for the *Times* was exhibited last year, Mr. Buckmaster delivered, on Monday, between twelve and one o'clock, an illustrated lecture on cookery. There was a good attendance, although the hour was early. There is hopeful evidence given already that in the course of the next six months the school of cookery will be instrumental in doing something to abate the national stigma that the English people, many of whom are notoriously underfed, are really the most extravagant feeders in the world, and chargeable, as regards their use, or abuse rather, of materials for sustenance at their disposal, with producing a "plethora of waste." It is to be hoped that Mr. Buckmaster may at least be instrumental in producing extensively accurate impressions as to the economic value and the virtues of the too long neglected *pot au feu*. In this connexion a valuable practical proposal by Mr. John Macgregor, of the London School Board,—"Rob Roy" of canoeing celebrity,—should not escape notice. Mr. Macgregor proposes to pay for the attendance at the lectures on cookery of 1,000 girls selected from the London Board schools. It need scarcely be said that, even discounting the number freely, on the grounds of parental prejudices, or of inaptitude on the part of the scholars, there should be left out of the 1,000 a goodly number of apt scholars, future wives and mothers, who may prove radiating centres of beneficent influence, and powerful agents in a domestic and social revolution of the most salutary character.

The machinery-in-motion department in the western ground-floor rooms excited much attention. Many of the machines were in operation, but all were not ready, and notice of this department and others may be properly deferred.

Concerning the Creswick and Phillip collection, we shall take our own time to speak of it in our own way. The architectural drawings placed in the gallery of the Albert Hall are not very important.

On Monday the visitors had the privilege of listening from the west quadrant to a concert by the Life Guards' band stationed in one of the band kiosks, in the Royal Horticultural Society's Gardens. Mr. Barnby's orchestra gave also two concerts in the Royal Albert Hall.

COLOUR.

LIGHT and shadow, as appreciated by the human mind, are intimately related to the delineation of form. Both light and shadow have, indeed, a special power of their own, which depends more on mass, or on intensity, than on figure. These cases, however, are comparatively rare and exceptional. A burst of golden sunlight, or the fierce blood-red glare which is thrown upon its black canopy of upcast ashes by the seething lava of a volcano, reads its own message to the mind, without waiting to be clothed in definite shape. But even in these signal cases, what may be called the absolute effect is fleeting. In a short space of time the eye begins to apply itself to the perception of the contour and undulations of the landscape, lighted by the sun, or of the majestic and threatening aspect of the fire-lighted columns of *scoriæ*. And if we take the only phenomenon of light which may rank with either the sunbeam or the lava glare, the hieroglyphics scrawled by the lightning on the veil of night, the bizarre form, and the rapid and startling motion, impress the imagination as distinctly as does the actual brightness.

But colour affects the mind in a mode distinct from the foregoing. It appeals to a different faculty, or order of faculties, from those which deal with form. Colour may be said to bear the same relation to light and shadow that music

bears to speech. The analogy is not poetical alone, it is true. Without entering here into the philosophical investigation of the opposite theories of light, it is undeniable that something of the nature of pulsation or vibration, of motion referrible to time, is involved in its action. Rythmical changes in these pulsations are associated with colours. We know that the ordinary terms in which colours are spoken of as qualities inherent in bodies, are merely conventional. They are scientfically incorrect. Colour is produced in the eye, or it may be more proper to say in the sensorium, by the incidence of light at a particular angle, or at a particular velocity. We know by the charming spectroscopic experiments of Mr. Huggins, that if the velocity with which a given pencil of issuing rays strikes the eye be increased or diminished, by the movement of the object on which they fall, the apparent colour will change; the actual flow of light remaining, under all circumstances, the same. All such terms as primary and secondary colours lose any but a conventional import in the face of this magnificent demonstration of a truth, of which the existence is indeed hinted by the hues of the rainbow.

Thus guarding ourselves from any accusation of assuming a physical theory of colour which is inconsistent with the little, the very little, that we know of its intimate nature, we may recal the close analogy that has long since been detected between the tints of the rainbow and the notes of the musical scale. And we do this, not only for the purpose of illustration, but with the object of pointing out how the effect of colour on the sensorium is different, not only in degree but in kind, from the effect of form. Form appeals more directly to the intelligence. Those of us who have not the misfortune to be born blind cannot conceive of material existence except under the category of form. And thus it is that shape has such a message to our minds. Form has a definite meaning in the general order of our ideas, whether we grasp that meaning in each individual case or not. So language has a definite meaning, noble and instructive, tender and winning, irritating or alarming; we know what the speaker, in our own tongue, intends to convey to the intelligence. But the tone in which the words are spoken is something allied to, but altogether different from, the words themselves. We can understand the tone, even if the language is foreign. The reason is that the spoken words appeal to the intelligence, while the tone directly awakens the sympathetic emotions. So it is with music. We cannot tell what idea is present in the mind of the nightingale, but his song awakens within us something of the emotion which he is endeavouring to excite in his mate, or which he is pouring forth from the full happiness of his own aërial life. So again an ear devoid of musical education, or of that delicate perception of time which is a gift very much apart from other mental endowments, cannot listen to the choral thunders of the organ of St. Paul's, or to such a splendid burst of music as the rendering of the "Song of the Seraphim" by the voice of Christine Nilsson, accompanied by the silver trumpet of Harper, without a sensation being aroused in the bosom of which the intelligence can give no adequate account.

Thus, if we rightly understand, form in the abstract, and form as defined by light and shadow, appeal directly to the intelligence. Colour appeals directly to the emotional part of the mind. Form is speech,—colour is music.

In any dissection of the elements of art, it is as well, in the first instance, to seek for direction from nature. It is in the forms of the clouds, shaped by no laws that we can formulate, not bent into planes and angles by any force of crystallisation, nor branched or balanced by any vitality of organic growth, that we may trace the countless vagaries of varied, yet even harmonious contour. On a grey, dull day, when the pale blue of the English sky can scarcely be detected, when masses of vapour, all of dull monochromatic tints, wreathe, and bow, and transform themselves into aërial castles, or mighty shadowy genii, the eye will linger with delight on the ever-changing celestial panorama. But when, as the sun goes down, or still more powerfully when he first rises in the east, purple and gold, and clear azure, and the bright silver lines of the columns of the dawn are thrown upon the vault of heaven, our attention is not attracted by the forms of the clouds. It is the glory, the harmony, or the magnificent contrasts of the colouring that fills the mind. We wish to draw the quaint fleeting forms of the grey clouds,—we are content to feel the magic of the living colouring.

Again, if we take the most beautiful object in this world, a noble human face, let us think of one in which sculpture can find no fault, in which physiognomy will love to find a mirror. Throw over this face the blue-black hue produced by certain diseases, or the unhealthy tint of the jaundice, we turn from it instinctively, although not a lineament of its positive formal beauty has been altered. Take a rude, uninformed, even a vulgar face, and light it up with the brilliant red and white of perfect youthful health, and the charm of beauty is at once added to its humble individuality. The nose may be small, the mouth large and clumsy, the eyes small and unlighted by intelligence; and yet, by force of mere glory of colouring, the peasant girl gives a pleasure to the beholder which the delicate, cultured, sickly, wealthy beauty can never unconsciously awaken.

Colour has the peculiarity of charming by itself alone; by the brilliancy, the depth, and the purity of its tint, apart from any question of balance, harmony, or distribution. The pure blue, cloudless sky of Italy, when the sun is so near the eastern horizon that the morning star has become all but invisible, while neither cloud, speck, nor shooting ray disturbs the still, vast, turquoise vault, may be regarded as the most striking example of pure and perfectly enchanting colour. The glorious red of our common poppy (in the rapid extermination of which by more careful cultivation of our wheat-lands the farmer is so regardless of the picturesque), when spread over a happily neglected field, is perhaps the finest instance of colouring to be seen in England. We may compare with it the golden blaze with which the furze-blossom covers miles and miles of the Pembrokeshire cliffs and downs,—a blaze which, but for the partial relief afforded by the green of the foliage, would soon become as intolerable as the odour of the blossoms, which, at first most delightful to the smell, after a time produces a sharp pain by its intensity. Perhaps the most lovely of all the colours produced by plants growing socially in large numbers is that of a field of flax, the pure, deep blue of which almost pales the azure of the sky. Flowers which have the rare peculiarity of varying between blue and red in the same, or at least in indistinguishable, species, are those which revel in the fullest and purest tones of colour. Thus the brilliancy of the scarlet flax may be taken as an example of one of the most glorious of all colours. The pimpernel, or shepherd's weather-glass, in the South of Europe (where, as in this country, it is mostly of a somewhat dull scarlet), in certain years is replaced by blue seedlings, indistinguishable from their red parents except by the possession of a lovely tint approaching the *Bleu de Roy* of Sèvres, and purer than the gentian itself.

All vegetable colours are beautiful. Every flower, if we except some of those ominous tribes that give warning of their venomous or rare chemical qualities by their pallid or lurid hues, appears always to be adorned in the very tint that suits it best. Even in the quaint tattooing of the gardeners, where squares, and stars, and crescents, are cut in the living turf, and crammed with variegated-leaf plants, and dwarf, hot-bed-reared geraniums, the blaze of beautiful colour redeems the clumsy toil of the horticulturist. The monsters into which the azaleas have been tortured,—pyramids or globes as stiff as if they had been moulded in clay, and with every leaf improved away out of sight, are yet beautiful, in spite of their deformity, by the charming hues of the blossoms. Nature cannot be forced to go wrong in colour. The wealth and glory of her hues overpower every fault in their distribution.

In birds, we see how nature, when left to herself, disposes of this magical gift. These creatures,—which in their power of flight, their natural melody, their instinctive skill, and their tender care of their young, from the moment when a second egg gives to the mother a hope that she takes good means of realising, embody most of the higher qualities that poetry attributes to the angels,—present the most numerous and splendid examples of colouring. In some instances, indeed, the exquisite delicacy of the feathers augments tenfold the lustre of their hues, by metallic reflexions, or by shadowy gradations of hue, as in the trogons and humming-birds. The triumph of taxidermy which is displayed, in some of these species, in the British Museum, ought to be known to all our readers. A perfect cascade of delicate cream-coloured spray falling over the darker tints of the lustrous body feathers, in one of the rarer Birds of Paradise, is an object that will be familiar to all the observant visitors of the zoological galleries.

As the tropical countries are those in which the ardent power of the sun calls forth the most brilliant colours both in the vegetable and in the animal world; and as the amount of land near the Equator is proportionately so much larger in the old than in the new hemisphere; so it is chiefly to the former that we are accustomed to look for examples of brilliancy of colour. In Brazil and the West Indies, and no doubt in many a deathly swamp untrodden by the white man's foot, humming-birds and butterflies may vie with the sunbeam in lustre. But the animals of the Old World, for the most part, occupy a higher place than those of the New. Among African birds, the simple combination of red and black, as in the case of the Bateleur Eagle and the Barbary pigeon, forms one of the most perfect lessons in colouring to be found in the great book of nature.

The sun has not only clothed his favourite children, the natives of the equatorial regions, with special glory of colouring, but has imparted to the human races that can bear his beams, as if in recompense for the bronzing or blackening of their skin, a special instinct in the application of colour. Black, indeed, is not the actual hue with which he tints the African. The negro infant, at birth, is of a dull cherry-red, and this colour, darkened to the extreme, is that which he bears through life. In the north of Africa exists a splendid race, with aquiline noses and true hair, the youthful members of which resemble Greek statues in bronze. The North American Indians are of a real copper hue. But we are not referring to the colour of the skin, set off as it is by lustrous hair, and by eyes that resemble stars, to be met with in Eastern travel. We are referring to the rare subtlety with which the textures of Eastern fabrics are wrought as concerns their colour. Quaint forms of pine, or shell, or pyramid, so conventionalised, ages ago, as to convey no meaning in themselves, are made the vehicle for such harmonies and contrasts of colour, now full and bright, now subdued into magical semi-tones, as to leave the European colourist absolutely nowhere. It is the same in the porcelain of Persian or Moorish origin. It is the same in the glorious stained windows through which the daylight has to struggle before it can kiss the most sacred spot in the world,—the mystic Sakhrah Rock, under the shadowing dome of the mosque of Omar. Wherever Oriental taste deals with colour, the result is like that of Nature herself. One exception, alas! we noticed in the Indian display at the Kensington Exhibition of 1872. The cheap aniline dyes have reached the Indian market. There is a quasi metallic lustre in their colours that is, after a little time, extremely wearying to the eye. The vulgarisation of the Oriental work that results from their introduction into Indian tissues is indescribable.

The beauty and vitality with which the painter clothes his work, when he is a master of colour, can be only very faintly echoed by the engraver, although he makes a technical use of the word, and translates the hues of the canvas, to some extent, by his wonderful monochrome. But it is very striking to observe the utter failure of photography to produce anything like a good engraving, when the camera is applied directly to a polychromatic object, such as a highly-coloured picture. This difficulty is not to be overcome by skill, — it is an inherent chemical condition. The only rays that chemically affect the negative are those of the blue end of the spectrum. Red light and yellow light, are invisible in photography, except in so far as they may contain a small portion of blue light. If a richly-coloured painting, in which these three colours are boldly introduced, is exposed to the camera, the dark blues will look white in the image, and the yellow will be turned to black. Thus, while photography may be a great aid to the engraver, it can never be a rival —never other than a servant, when monochrome is left behind. The magnificent picture by Gustave Doré, representing Christ leaving the Prætorium, which attracts so large and so hushed, almost awed, an attendance to the Gallery in Bond-street, is thus being reproduced for the engraver. The picture has been photographed, and the photograph enlarged, to the size of the intended engraving. On this photograph, printed of course but lightly, an artist is engaged to colour

after the original. From this the engraver will work, employing the aid of photography to give absolute accuracy to his forms, and then using the instinct of his art to translate the colour. This is the true method. A mechanical process may be called in to aid the living artist, but it can never rival, nor supersede, his genius—when, indeed, genius is present.

But the point where the command over colour is lost by the painter is what we call its play. In all the magnificence of nature, in all cases where colour, either of a splendid or of a gloomy tone, produces the most powerful impression on the mind, it does so by the aid of nature. The most glorious sunrise would lose the greater part of its charm if the evanescence of its hues could be arrested. Nothing can make up, to the human imagination, for the absence of life. When colour is avowedly absent, as in pure sculpture, an order of emotion is excited which is not altogether sensuous. The imagination gives life to the statue, if it be one on which the potentiality of life has been impressed by the sculptor. The seated figure on the Medici tomb is not regarded by any cultured observer as a piece of marble. The grand Idea of Michel-angelo scowls from under that shadowy casque; and it needs but little effort on the part of the awe-stricken spectator to attribute a ghostly life to the figure. With a painting, this is altogether different. We are not speaking now of human expression, or even of the expression of animal life given by such magic pencils as those of Landseer and Rosa Bonheur. We are speaking of the harmony of colour. With reference to this, nothing can make up for the want of that constant interchange which is the result of motion. The very constitution of the optical powers of man involves this law. Thus we may partly account for the intoxicating influence excited, over the minds of many, if not of all, by spectacle. If we can make abstraction of that common sympathy which is so remarkable an incident of all great assemblages of people, and if we select instances where the intellectual interest is low, or is fictitious, as in the case of a well-known play, there yet remains a powerful effect on the imagination which is due to colour, —to bright light, sumptuous dresses, flaming jewels, and all the external movement and glitter of a stately assembly or well-dressed crowd.

The play and movement of colour have been seized upon as the principle of a very humble instrument, now far less commonly to be seen than was the case twenty or thirty years ago, which may some day prove to have been only the first step in a very productive path. Of course we refer to the kaleidoscope. The defect of this ingenious little tube is the exact and invariably geometric outline of the figures which it produces. It gives play of living colour, but the limiting lines are so severe, and often so ungraceful, as to disturb the effect that the movement would otherwise produce. But if we conceive an instrument like the kaleidoscope in which, whether by the use of curved mirrors or by more directly chemical means, the successive colours should be bounded by the shadowy outlines of the clouds, or even branched and interwoven into one another like the light and shade of a forest, or the foliations of Persian faïence or of Indian embroidery, we may see that it is not impossible for the spectator to be, by artificial means, charmed by a display of the visible music of rich and changeful colours.

We do not understand that the sentient or emotional part of the mind can be educated like the intellect. Yet all life is, to a certain extent, an education of the emotions. And perhaps the gradual expenditure of the golden fountain of youth forms the sternest part of this education. It is therefore quite possible that colour, as an emotional element of beauty, can never be so mastered by human science as design in form. But, on the other hand, we find the kindred art of music,—music which is audible colour,—to have made, within the past two or three centuries, more distinct and rapid progress than any other art or branch of art. We cannot doubt that our musical knowledge and power is far in advance of that attained in any previous period of the history of civilisation. Music is the only art in which the men of our days are not dwarfed in comparison with the giants of the past. We speak, of course, of pure, not of industrial, art; and we must remember that to the great progress of science and of manufactures music owes very much of her present power. The instinctive genius of Straduarius detected forms and conditions for the violin which the subtle anatomy of the highest mathematics can only explain and confirm, not improve. The violin attained perfection in his hands as an instrument,—a perfection not since approached. But if we take the mighty organs of the day, with electric touch and steam-fed lungs, we have a grand example of mechanics ministering to art. It is not impossible, if somewhat of the same enthusiastic study were given to the subject of colour by those whose eyes are as alive to its beauty as are the ears of the lover of music to melody and harmony, that we should obtain splendid results. As it is, the lover of colour must seek its charms not in art, but in nature,—in the clouds, in the flowers, in the rainbow, or, rarest and noblest of all, in the changeful, rosy, and transparent complexion of a beautiful English woman.

SOCIETY OF BRITISH ARTISTS.

Years ago, and from time to time, the Society of British Artists numbered amongst its members some of the ablest and best to be remembered landscape-painters. Landscape was the specialty of the Suffolk-street show of pictures once, and the possibility of its resuming to a certain extent its old prestige, and becoming the chief honoured and honouring home for the professors of its depiction, occurs when such admirable specimens as Mr. H. T. Dawson's "Misty Morning on the Tamar" (181); Mr. G. Cole's "Fern Cutting: Mist clearing off—Harting Coombe, Sussex" (10); Mr. W. Gosling's "Harvest-time at Hennerton" (149), although the heavy bowed wheat is almost a too magnificent sample—ten ears to the 4 lb. loaf; Mr. S. R. Percy's "Glencoe, Argyleshire" (133); Mr. H. Moore's "Gathering Ferns" (138); and Mr. Jas. Peel's Welsh scene, "Canal and Aqueduct on the Usk" (169) are present to suggest it. An increase of such productions, and some better assistance from the general society of British artists than has hitherto been offered, would establish the title of this institution to be as fairly representative, instead of, as it is now, but nominal. Sir Francis Grant is not the only Royal Academician who lends a countenance to this occasional assistance; the "Portrait of Mrs. Markham" (73) shows a very handsome and winning one; for Mr. G. Richmond gives similar help, only varying in relative interest, "Portrait of William Blake Richmond" (37); supplemented by a vigorous chalk drawing of "The Archbishop of Syros and Tenos" (866). Mr. Leighton, too, indicates, in a couple of small studies of heads (370 and 514), how well he can draw as well as paint. "A Roman" and "Vittoria" are probably early performances, but they tell of sound training, and with Mr. Palmer's landscapes (369, 371), wear a look of affinity to "old masters."

Very little variety from preceding collections can be found to separate the one for this season from many another. Mr. C. Baxter's Neapolitan or Italian tambourine-girl, "Camilla" (132), is the most attractive of some three or four of his fascinating bewilderments, who will leave no play for a critic's conjecture 300 years hence as to their paternity; any further than "Sunrise, with the story of "Leander" (160), or rather the finis of it (for the long-breathed swimmer has done his last, and is stretched on a cold rock by his too-powerful, and now slowly retreating adversary—the sea), could be mistaken for any other's version of it than Mr. A. J. Woolmer's: both these painters appear to be inimitable in their totally dissimilar manner, and divide between them nearly all the imaginative leaven that, shared by a dozen, would vastly improve the batch of their productions. The most difficult achievement for the artist is to combine fact with fancy, no doubt,—or, at least, it seems to be. Proof enough exists now of a wide-spread capability to paint cleverly, and represent very satisfactorily natural appearances, or anything that may be imitated, yet the dearth of pictures amongst paintings—authorship as distinguished from and compared with caligraphy,—becomes the more remarkable as the supply of paintings and drawings is multiplied.

Mr. J. Gow has applied considerable power and good taste for colour on the figure of the eighteenth-century belle, with a lover at her feet, about to replace the shoe he has adorned with one of his latest presents, "Diamond Buckles for my Ladye's Shoon" (4), and again in a representation of "Goldsmith amusing young Collins," by juggling with a sixpence (264). Mr. E. C. Barnes has often turned to better account similar advantages than he has in (19) "Butterflies," the name given to an ordinary agroupment of elder sister and younger brother. "The Eve of May-day" (25), in old London, when youths and maidens took holiday, and the streets were garlanded with spring flowers, is very picturesquely and neatly described by Mr. D. Pasmore. Mr. W. Hemsley's country boy stolidly intent upon accomplishing the trick of cup-and-ball, "A Day after the Fair" (44), or when performing "A Tonsorial Operation" (285), he hammers a big nail into the doll's head, to fix its back hair, like most of Mr. Hemsley's models, looks free of all consciousness that he is being painted. A perfect naturalness that never verges on vulgarity, is the real secret of such works' success. Mr. Roberts is even more refined in his treatment of matter-of-fact instances, but then he goes a step or two up the social ladder to fetch his actors or actresses,—to be most precise in allusion. "Lizzie Farren (afterwards Countess of Derby) bringing her Father's Breakfast of hot Milk to the Prison" (294), assisted by a polite boy, who had observed her difficulty in avoiding a fall on the frosted pavement, is the prettiest and most agreeable notion of the incident possible, but a very improbable one: the heroine is costumed more like a little countess already than the daughter of a poor strolling player, though by no means warmly, and she does not look cold.

And strangely unlike "Little Em'ly" to be at all like David Copperfield's admiration is the demure and nicely-painted anybody who sits for her here (90); pleasant enough to look at, though her connexion with Dickens's creation is as little clear as "No Name" could make it with Wilkie Collins.

"Solving the Problem" (80), by Mr. G. E. Hicks, may either mean to ensure how holy writ may be heard, read aloud, with real feeling, or how the blind may really lead the blind; for one of those who have all their learning at their fingers' ends is instructing from the embossed text a crowd of wondering children.

Mr. A. B. Donaldson's two pictures should certainly have been hung in better positions. With so much trite rubbish sickening the eye at its level, it is as much an insult to the spectator that worthy work should be denied fair view as it is to the clever painter. "Violets, Penny a Bunch," by Mr. Haynes King (62); "The Ballad," by Mr. J. J. Hill (108); "The Jesuit," by Miss M. S. Tovey (104); "Portrait," by Mr. P. Priolo (161); "A Beggar Boy," by Mr. J. H. Walker (184); "News from Abroad," really admirable, by Mr. R. J. Gordon (360); by whom another seated figure, "Anxiously Waiting" (159), serves to provide evidence that the quality of the former was obtained by no "fluke," are some of the best painted heads in the collection. The dogs, one of which is "The Keeper's Favourite" (49); and the game, by Mr. J. S. Noble, are not easily to be surpassed; and "The Cattle on the Coast" (113), by Mr. T. F. Wainewright, would take high rank in their class anywhere but at a Smithfield show.

Mr. J. T. Peele's "Highland Supper" (54) fails by very little of being a very much finer production; "Meal Time" (69), a Mediæval domestic adaptation much in the style of Mr. Marks; "A French Girl" (110), by Mr. W. H. Weatherhead; "Left in Charge" (143), by Mr. Edwin Roberts; "Marine Monsters," by Mr. W. M. Wyllie (156); "Wood Gatherers" (175) and "The Seaside" (321), two of Mr. E. J. Cobbett's most telling works; "The Mountain Spring" (197), a very favourable example by Mr. J. Henzell; "Tea-time, Daddy," a homely, natural representation with its worth of being directly drawn from nature, by Mr. J. C. Waite (218), and "The Heir-at-Law," by Mr. E. Porteus (412), are indicative of what constitutes the bulk of 500 oil paintings or more.

Mr. Wyke Bayliss, F.S.A., contributes a fine architectural interior of "Ypres Cathedral: Relics in the Chapel of the Black Virgin" (189), and nearly as elaborate a water-colour drawing of "Interior of Dixmude Cathedral—a Village Festival" (736). Mr. W. Henry copies the style of the late David Roberts, R.A., so closely that he can never hope to paint equally well. "Interior of the Jesuits' Church, Venice" (491), is very noticeable, if it be only to remind followers that they must always be behind.

Between 300 and 400 water-colour drawings lend additional interest to the present exhibition. The wonder is that there should not be something astonishing amongst them.

DEMOLITION OF A PLAGUE SPOT IN KENSINGTON.

THERE are few readers of the *Builder* who have had to pass through the High-street of Kensington on foot but have had their attention called to a number of idle men, girls, and boys who for years past have claimed the frontage of a low public-house, set back from the pavement, as their recreation-ground, and if the weather suited, also the pavement for "a lay-down," and thus turning the pedestrians into the road.

Few, however, ever ventured to the rear of this "plague spot," that defied laws for the prevention of fever, small-pox, and other epidemics, and even the metropolitan police force; for the parochial authorities, as well as the magistracy, were paralysed and powerless. The only man who knew all about this truly horrible colony was the collector of the rents for the landlord, who was a builder and a magistrate of the county of Middlesex. The plague spot was, however, a mine of wealth to the owner,—it was an "Alsatia" sacred to the lowest class of Irish,—many of whom were *wanted* before they left Erin, and others, most dangerous of all, known as the Cockney Irish. Rent of an exorbitant nature was duly paid on the Monday, and the collector was besieged for an apartment in Jennings's-buildings. This latter demand for a "snuggery" was the secret of the landlord's and collector's protection from violence when visiting the "Warren."

There was a time when the "police" had to fetch a priest, to ensure their lives, if they wanted a notorious character, or even to quell a faction fight; but at last no "father" would act as a "special protector," and the order came out from Scotland-yard to let Jennings's-buildings fight it out amongst themselves. So long as the "boys" did not fight in "Tavern-yard," the following spots,—New-court, Cooper's-gardens, Palace-place, and Jennings's buildings,—were fields the men could bleed on and where the women could make mats of their torn-out hair unmolested.

At the rear of the Tavern, was a long dancing-shed; and when Tom Hardy was alive, and kept this fortress, his good lady also dispensed eatables, and, perhaps, not one of the colony but were indebted to these tradesmen for ale and groceries. It was also a smuggling-shop, and when the dance was on, unrefined whisky was brought in, and the boys would take off their boots and the wenches their petticoats to pawn with a money-lender present to keep up the merriment. The writer of this was in the shed one grand night for the benefit of a "jantilman" who wanted a "mouthpiece" to get him out of a little trouble he was suffering through, for merely trying to drown a policeman by knocking him off the towing-path into the Thames. When it became time to hear the cock crow, and go home with the milk in the morning, the ball broke up, and the dancers then proceeded to the "Square," and arranged themselves into opposite parties. Stones, brickbats, choppers, pokers, frying-pans, saucepans, crockery, and every handable means of murder were freely distributed. The cries at last reached the ears of the police, through the peaceable inhabitants outside the "Warren" jumping out of bed and opening their bedroom windows, joining in the chorus of "Murder." It was murder, murder, everywhere, and no police to hand!

The police inspector called upon the landlord of the tavern to aid and assist in the name of the Queen, and in a few minutes, the belligerents, bleeding and howling, retired into their holes, at the simple order of the landlord and his wife. These practices, only altered for the worse, have been going on ever since, and nearly opposite to the palace her Majesty was born in; and as diseases of all natures were constantly decimating the "Warren," and spreading throughout the metropolis and country, the parochial authorities helpless, a gentleman of name of Grant has purchased the estate, the enumerated population of which is, according to the last census, 876, in eighty-three tenements; but Dr. Dudfield, the medical officer of health, who rejoices at the advent of Mr. Grant, sets down the number at 1,200 souls or more.

To get rid of this "plague and lawless colony" was no easy matter for the new landlord; and the after-experiences have led Mr. Grant to appreciate the motives of the *subscribers* to the Notting-hill Volunteer Fire Brigade in shutting their doors in the face of the yearly collector, as the report stated the brigade had put out a fire in Jennings's-buildings, and which, but for their timely arrival, would have burnt the place down. The original collector of rents would not, and could not, dispossess the inhabitants of the "Warren." The County-court officers at Brompton had plainly told the judge that they had wives and families, and no pensions for them if killed. The magistrates of the Hammersmith Police Court were told by the warrant-officers, that if ejectments were issued it would be an impossibility to carry them out; for if the tenants were ejected one hour, they would occupy their rooms as soon as the police left.

In this fix, the new owner of this delightful estate, with a "Palace-place," called a parley of the "Warren," and actually had to agree to give the occupiers of each room 2*l.* compensation, as well as the right to remove the firewood in their rooms. The new owner did not, perhaps, take into thought the meaning of "firewood" in the Irish vocabulary; but he knows now. His houses are a complete wreck,—floors, staircases, doors, window-frames, joists, roof-timbers, stoves, water-tanks, pipes, stones, slabs, the pavement, tiles, and slates have all disappeared, and not one brick would have been left, but for a strong force of police, and these had to protect a body of bricklayers, who have now blocked up the entrance of this horrible "Warren."

The colonists have dispersed, some to Nottinghill, some to Fulham, and others to Battersea. The nest is destroyed: who will look after the birds?

From first to last this plague-spot, it is computed, has cost the parish of Kensington at least half a million of money. What this "Alsatia" has cost the country it is impossible even to guess.

NEW BARRACKS ON THE CASTLE HILL, EDINBURGH.

IT seems to be generally understood that a barrack should be Bœotian in style: why it is so is one of those things "which no fellow can understand." The west end of the Castle Rock of Edinburgh is disfigured by a block of building of this nature, and now it is proposed to disfigure the southern slope of the Castle Hill in a similar manner. The building in question is intended for the accommodation of married soldiers, and consists of a long narrow strip three floors in height, having rooms of 14 ft. square without any recess or convenience whatever, each of which is to be used by a single family. They are approached by open iron galleries on the north side, and the elevations otherwise show no break or architectural feature. About fifty or sixty yards in front is an erection providing a depôt for coals, &c. The plan appears to be a srereotyped one, which the War Office authorities seem to consider suitable for any site, and which might do upon a flat surface where a court-yard could be formed, but in this instance the slope is so steep that access to the outhouses can only be obtained by the formation of a flight of steps or a zig-zag pathway. These barracks then would not only be exceedingly ugly, but very inconvenient.

The attention of the Town Council and the Architectural Association having been called to this matter, a memorial was forwarded to the War Office, pointing out the unsatisfactory character of the building, accompanied by a plan prepared by Mr. Robert Morham, City Superintendent of Works, showing how the external appearance of the building, as well as the accommodation, could be improved without materially altering the original plan. Mr. Morham proposes to secure this end by advancing wings at each end and the centre slightly, and adding gables and towers, which latter features are not merely ornamental appendages, but contain cupboards and other useful additions to the comfort of the inmates, a class who do not usually possess much furniture to give comfort to their temporary residences.

The additional expenditure involved would be under 2,000*l.*, but the War Office adheres to its original plans, founding, upon the fact that they have passed the Dean of Guild Court,—a very lame plea indeed, seeing that the jurisdiction of that Court does not extend to the æsthetic character of the plans requiring its sanction. When it is kept in view that private individuals have, with praiseworthy consideration, given the buildings recently erected in this neighbourhood a character in keeping with the surroundings, it does seem strange that the rulers of the wealthiest country in the world should act in so narrow a spirit.

Much money has been spent upon museums and art-galleries, and yet when art is to be applied to practical use it is ignored: this is surely being "penny wise and pound foolish." Were such a building to be erected in France, the opportunity would be embraced of producing a structure which would add to, and not detract, from the beauty of a city like Edinburgh. The matter is not to be allowed to rest, however; it has been taken up by the city members, and we earnestly hope they will be successful in preventing the completion of a building which would prove a blot upon one of the most picturesque sites in the kingdom.

THE BUILDERS ON THE WALWORTH COMMON ESTATE.

IN the *Builder* of the 22nd of last month, we stated that the Newington governors and guardians, as the managers of the Walworth Common Estate, were making grave complaints against certain builders on the estate for violating the terms of their agreements with respect to materials used in the buildings, and also in regard to the takers of land who had failed to commence building under the terms of their contract, and that the surveyor had been instructed to take proceedings in all cases where there had been such violation of contract.

At the meeting of the governors and guardians held last week, it was stated that the solicitors, acting upon the reports made to them by Messrs. Jarvis, the surveyors, had taken steps for re-entering and taking possession of plots Nos. 1, 2, 3, 4, and 34, 35, 36, and 49, in Alvey-street, in consequence of the takers of such plots having failed to proceed with the buildings thereon; and that there had been a similar re-entering and taking possession of certain plots in Mann-street, arising out of the same cause. The result of this proceeding is that, under the terms of their contract, the takers of the plots in question forfeit the money deposited by them at the time of letting, together with their interest in the plots of land taken.

RAFFAELLE'S HOUSE IN URBINO.

OUR readers may remember that an endeavour was being made to raise money for the purchase and preservation of the house in which Raffaelle was born. The sum asked of the municipality was 20,000 lire. On the 6th inst., the anniversary of the great artist's birth and death, there was a large gathering of visitors, and a meeting was held in the Ducal Palace. The list of subscriptions was read, and on its appearing that 5,000 lire were required to complete the purchase, our countryman, Mr. Morris Moore, stated his willingness to give that sum, in addition to his former subscription. At four p.m. the deed of purchase was signed. An address was presented to Mr. Moore, and at a banquet in the Salon di Ariosto the freedom of Urbino was conferred upon him.

The Ducal Palace in Urbino was considerably injured by an earthquake on the 12th of March, but the principal rooms escaped damage.

THE NEW BUILDINGS IN ST. BRIDE STREET AND LUDGATE CIRCUS.

THE newly-formed St. Bride-street, from Ludgate-circus to the junction with Shoe-lane, will very shortly present a prominent architectural appearance. The west side, more particularly, is being rapidly covered with large and substantial buildings of a palatial character. Messrs. Cook's Continental excursionist block of buildings, which has already been described in the *Builder*, has, during the present week, been advantageously exposed to view by the removal of the scaffolding; and we understand that those portions of the spacious building intended as Messrs. Cook's offices, and the sections now being fitted up for the Midland Railway Company's depôt and receiving offices, will be opened for business in the course of a fortnight.

Adjoining Messrs. Cook's block, extensive premises are in course of erection for Messrs. Collinson & Lock. This block, which is a bold-looking and massive structure, built of red brick, with stone dressings and window piers, is very lofty, the St. Bride-street elevation being carried almost to the height of the adjoining block just named. The building consists of a basement and ground-floor, with four stories above. The ground-floor contains a large central window for

business purposes, upwards of 16 ft. in width, with spacious entrances on each side. The several stories above have large central bay-windows, each containing five divisions, with double windows on each side. Messrs. Woodzell & Collcut, Finsbury-place, are the architects; and Mr. Hennor is the contractor.

A portion of the site immediately adjacent, at the angle of Poppin-court, is also about to have a large building erected upon it; the architect for the intended structure being Mr. A. Bridgeman.

Still higher up the street, northwards, another fine building is in course of erection, and already carried up to the third story. The materials used in this building are white Suffolk brick; the windows, which are circular-headed, being of red brick, bands of the same material being also freely introduced in the elevation, together with ornamentation in terra cotta. Mr. H. H. Bridgeman is the architect for these premises, Messrs. Elkington being the contractors.

A little further up, again, another large block has just been erected, designed by Mr. L. H. Isaacs; whilst, immediately adjoining, very extensive new premises are about to be erected for the proprietors of the *Standard*, in addition to their new premises in Shoe-lane, recently completed. These premises will have a frontage to St. Bride-street of about 51 ft. in width, and extend the entire depth from the last-named street to Shoe-lane. The excavations for the foundations and basement of the building are now in progress, and the extent and magnitude of the intended structure may be conceived when it is stated that the contract for the foundations alone is between 3,000*l.* and 4,000*l.* Mr. Gundry is the architect, and Messrs. Trollope are the contractors.

The foundations are also in progress for another new building, adjoining the last-named, at the junction of St. Bride-street and Shoe-lane. The west side of this new street will thus shortly be covered with important buildings.

Returning in the direction of Ludgate-hill, on the east side of the street, the Mutual Investment Company's new buildings, at the corner of St. Bride-street and Farringdon-street, are now completed, and have this week been opened for business; whilst within the last few days workmen have been engaged in excavating, preparatory to the formation of the south-east of Ludgate-circus, adjoining the London, Chatham, and Dover Railway Company's.

THE NORFOLK COUNTY SCHOOL.

At North Elmham, a pleasant village, which was once a city, and from the year 603 to 1075 was the seat of the Bishops of Norwich, the foundation stone of the new Norfolk County School has been laid.

The movement which is taking place in Norfolk, like that which took place in Devonshire some years ago, must be attributed to the efforts of the Rev. J. L. Brereton, Prebendary of Exeter Cathedral, and is part of the system which has called into existence county schools in Bedfordshire, Suffolk, and other counties; has led to the Oxford and Cambridge Local Examinations; and promises to culminate in the establishment of a county college in connexion with the University of Cambridge.

North Elmham is almost in the centre of the county of Norfolk, and conveniently situated for railway accommodation. The site selected is contiguous to the mansion of Lord Sondes, and skirted by the River Wensum. The estate, which has been purchased by the Earl of Leicester, comprises thirty-seven acres, and has a frontage next the river of nearly half a mile. The Wensum will afford ample accommodation for boating and swimming, whilst the grounds are sufficiently capacious for all the purposes required for a public school. The movement has throughout had the sanctio n and support of the Prince of Wales, whose estate is situate twelve or fifteen miles distant. The building is being erected on the summit of the hill, overlooking Lord Sondes's park. The style adopted is the old English Domestic, the exterior being of flint, with red brick dressings, large dormers and weather tiling at intervals. The roof will be covered with red and black banded tiles. All the timber work, externally and internally, will be stained and varnished. The large hall on the ground-floor is intended to be a general place of meeting, the reception-room being raised a few steps to form a stage or platform. The school-room will also be so arranged as to increase the space, where necessary, to afford accommodation for about 500 persons. The galleries round this hall are fitted with presses for clothes and linen. No lavatories will be provided on the dormitory floor. It is intended to have ordinary washstands in the dormitories, and to give as home-like an appearance as possible to them. Large barrack-like dormitories will be avoided; the largest of the rooms contains only thirteen beds, and many only six or seven. Kitchen offices and dining-hall are on the top floor. The master's house communicates with the building, but is practically detached from it. A corresponding building on the opposite wing will form, if ever required, an infirmary, sufficiently detached from the main building to prevent anything like spread of infection. It will be complete in itself, and can be at any time cut off from the main building by ventilated lobbies, having closed doors.

The heating at present contemplated is by open fire-places only; but provision is made for hot-water pipes in the large hall, school, &c. The ventilation will be by the same means, with ventilators placed below and above the level of each floor.

The architects are Messrs. John Giles & Gough, of London. In the present building the average cost of county schools is by no means reached, and the problem of the promoter, Mr. Brereton, is solved. This gentleman has contended that 30*l.* per boy should in a school of 300 boys furnish the building proper. The architects have on their present plan obtained a contract for the structure within this sum. The builder is Mr. Robert Skipper, of East Dereham.

OPENING OF THE YEOVIL WATER-WORKS.

The new waterworks for Yeovil have been completed, opened, and formally handed over to the town authorities by the engineer, the clerk of the works, and the contractor for the reservoir. The contract for supplying the pipes (about 14 or 15 miles) was taken by a Glasgow firm, Messrs. Stewart & Co., at about five guineas per ton. Immediately afterwards the price began to rise rapidly; and had the purchase been delayed, the total cost of the pipes would have been increased from about 7,000*l.* to nearly 14,000*l.*

The contract for laying pipes was let to Mr. Joseph Walker, of Crewe, represented throughout by Mr. Worthington.

The water is obtained from the lower greensand, in the parish of Melbury Bubb, near Evershot. The main supply is derived from springs in a wood called Spring-pond Plantation, close to Holywell Tunnel, and a second contribution is obtained from the tunnel itself. The water from the plantation passes through a small circular filtering tank, which was constructed at a cost of about 100*l.* The tunnel stream joins the main a little lower down. The length of the 8-in. main, from the sources to the reservoir on Newton-hill, is about eight miles. The main from the reservoir to the town is 11 in. in diameter, and the town mains vary from 3 in. to 11 in. The laying of the pipes cost over 2,000*l.*

The reservoir was constructed by Mr. Ridal, of Wadsley, Sheffield. It is about 100 ft. in length and 50 ft. in breadth, and will contain a depth of about 10 ft. of water. Its capacity is somewhat over 250,000 gallons, which is more than the daily consumption of Yeovil is likely to reach for some years. The reservoir which is lined and floored with brick, is covered with arches resting on brick pillars. The whole is covered with earth, and the earth is sown with grass, so that a few months hence it will present the appearance simply of a green mound surrounded with an iron railing. The total cost of this part of the work was a little over 2,000*l.*

The reservoir is more than 200 ft. above the lower parts of the town, and the sources are 100 ft. higher still. The water, therefore, flows very freely through the eight miles of main, and the pressure on the town mains is equal to that of the steam in a locomotive boiler!

The works were designed by Messrs. Thomas & Charles Hawksley, of Westminster, and were carried out under their superintendence, represented by the clerk of the works, Mr. C. E. Robinson. The cost of the works proper, exclusive of payments for land, compensation, and incidentals, has been about 13,000*l.*, or about 400*l.* or 500*l.* more than Messrs. Hawksley's original estimate. The total cost will ultimately reach about 20,000*l.*

SUGGESTIONS AS TO THE ARRANGEMENT AND ARCHITECTURAL TREATMENT OF PICTURE GALLERIES.*

Buildings for the exhibition of paintings may be considered under three principal heads: in regard to lighting, which is a purely practical point; in regard to the arrangement and classification of the pictures and other works of art, which is, or should be, based on æsthetic considerations, but which practically affects the planning of the rooms; and in regard to the architectural and decorative treatment of the building, which, though in one sense a purely artistic matter, is governed to some extent by practical considerations bearing on the due effect and the character of the works of art exhibited. Picture-galleries in general, again, must be to a certain extent regarded as divided into two classes—those intended for periodical exhibitions of new works, and those intended as permanent receptacles for collections of a less transient interest; for the conditions in these two cases are not by any means the same. In regard to lighting, however, both permanent and periodical art-galleries are on pretty much the same footing; and no other question connected with them can be of so much importance, obviously, as this: nor is there any point in connexion with the subject on which there have been so many theories, and, I believe, so many failures. In regard to paintings, a great portion of the difficulty of lighting arises from the fact that the vehicles now almost universally used by oil-painters reflect light more or less, and the necessity for placing water-colours under glass brings them into the same category. It was this difficulty which led, in a great measure, to the employment of fresco for the paintings in the Houses of Parliament, as some of our leading artists pronounced that it would be impossible for oil-paintings to be satisfactorily seen under such a light as they would be subject to there, from low windows placed at various angles to the surface of the picture. The popular faith on this point, at present, may probably be summed up in these two articles,—that you cannot have too much light in a picture-gallery, and that you must have it from the top. Both these articles of faith must be taken with a certain reservation, however. It is quite possible to have too much light in a picture-gallery, and to defeat your own ends in introducing it. In regard to the top light, however, its superiority may be accepted as generally incontestable in the case of the great majority of pictures in most collections; the circumstances in which it may not be the best will be referred to afterwards. It may be said, however, that definite reasons have been assigned in contradiction of the top-light theory; and the Berlin gallery was built with side-lights, on the ground that painters almost invariably work with a high side-light, and that the spectator should see the picture under the same light as it was painted. In reference to which it was pointed out by Sir Charles Eastlake, that if a picture was painted with a side-light from the left, and had to be so hung as to get a side-light from the right, the conditions of the painter's light would just be reversed. To which it may be added that the spectator does not want to see the picture as the artist saw it, when working upon it, minutely and in detail, but to take in the whole effect from a little distance. But the real philosophy of the top light seems to be simply this,—that it is only by placing the light high that we can insure escape from the surface glitter from the picture, and a skylight is the simplest and most manageable way of procuring a high light; besides that, if properly constructed, it operates equally in regard to all the walls of an apartment. The manner in which the high light enables us to avoid the reflection may be seen if we make a section of the proposed room with its skylight, and then annex to it a reverse section, taking the plane of the picture as the dividing line; the lines drawn from the extremities of the light, in the reversed section, to the eye of the spectator, will show, where they cut the plane of the picture, on what portions of the wall a reflection from the picture will be inevitable. Thus it will be seen that, with a light at a considerable height above the upper line of pictures, the larger pictures, which require to be viewed at a greater distance, and which on that account alone should be hung highest, are below the line of reflection when viewed from a proper dis-

* From a paper by Mr. H. H. Statham, architect, read at a meeting of the Liverpool Architectural Society.

tance; and when the spectator approaches nearer to examine the smaller works nearer the eye, though the larger pictures are thereby brought into the line of reflection, the smaller ones lower down are still clear of it. The higher a picture is hung, then, the more subject is it, in the majority of cases, to surface reflection; and it is to obviate this that in badly-lighted galleries we often find the upper row of pictures inclined forward, so as to throw the reflection below the spectator's sight-line; a method of hanging which has a singularly unsightly effect on the general aspect of the room, and does not tend to improve the effect of the picture. Such an expedient is merely shirking a difficulty, and always means either that the picture has been placed too high or the light too low. The principle laid down by Sir C. Eastlake was, that the picture and the source of light should not be within the range of vision at the same time; the range of vision being comprised within about 60°, the light should be so far above the picture that, at the point at which the spectator would stand, the picture and the light should subtend an angle greater than 60° with the eye. This, though a somewhat different way of putting it, comes to very nearly the same result practically.

The next question to that of the position is the construction of the light. The commonest form is that of a simple raking skylight, with the glass on the level of the outer roof, and following its line. This has been adopted in the rooms at Burlington House, and there is little to find fault with in the light there. Another arrangement,—possessing, I think, some advantages,—is that of a double skylight, the upper one on the roof consisting of clear glass, the lower one on the ceiling level being a horizontal glazing, with obscured and, if possible, roughened, glass. This brings the apparent light lower in the room, which, however, would only be of consequence in a room of somewhat limited height, and any disadvantage it may have even in this way is counterbalanced by the mild and diffused character of the light which is gained in this manner; for it must be remembered that a mass of diffused light, and not "rays of light," is what is wanted in a picture-gallery, and this treatment would go far to weaken the bad effect of reflections, even where the pictures were so placed as to be liable to receive them; besides which, by the use of the lower layer of obscured glass, the bad effect of sunlight passing through wet glass (in showery weather) is avoided; and this method offers possibilities for very good internal treatment of the ceiling. In such a case, easy access between the lights, for dusting and cleaning, would of course be imperative. It is necessary in arranging the building for top light, if any of the rooms are lower than the others, to take care that the higher ones are not placed so as to rob any of the lower skylights of their best light, and for the same reason a site should be selected not overlooked, or likely to be overlooked, by loftier buildings,—a very obvious consideration perhaps, but one of those little things which are sometimes in danger of being forgotten, just because they seem so much a matter of course. Another point which is worth attending to in the plan of top-lighted galleries, is to cut off the corners on plan, so as not to place the pictures in the corners too far from the light. The corners of the rooms appear to be considered by hanging committees to be rather good positions for the smaller pictures, so far as attracting spectators goes; it is certain that many of the finest of the smaller works at the Academy are placed at the angles of the rooms, and you generally find a group wedged round them, the confluence of two streams of spectators; but there is nearly always a certain deficiency of light in the corners, and if they were canted off at an angle of 45°, the pictures hung there would get all the moral advantages (as we may call them) of the position, with more light and more convenience to the spectators. In regard to the equal distribution of lighting over the pictures it may be observed that the octagon room in Post Office-place, where the Liverpool Academy Exhibitions used to be held, was very successful in this way; and it may be suggested whether a room in this form is not one of the best adapted for the exhibition of a large number of miscellaneous works under equal conditions; all dark corners and jamming of the spectators at the angles are avoided, and all pictures on the same line are very nearly equidistant from the light. They would, of course, be still more so in a circular room; and it is noticeable that the room which Rubens built for the exhibition of his own works is in this form. But for a permanent gallery, where pictures ought not to be crowded, but to be so placed as to be studied separately, a long room would probably be found the most effective form, for the combination of architectural and pictorial effect. In long rooms lighted by a skylight, a practical difficulty occurs in the necessity for roof trussing at intervals, which must tend to obscure the light at certain points; and here the system of the double skylight, before described, would assist us in meeting the case, as the light would be so far diffused by the thick lower glass that no definite *bar* of shadow would be seen across the lighting surface, unless the tie-beam were very close to the glass. The late Mr. Papworth suggested a good while since, on this very account, a form of roof construction with an iron curved truss carried high above the lower skylight, which, in fact, was to be hung from the truss, giving a light to the pictures through the sides and centre, and with an opaque hanging ceiling over the spectator, so that he might have no light except where he wanted it. A disadvantage of this arrangement would be that the opaque ceiling might obscure the light in regard to some of the larger pictures which would have to be viewed further off. But in regard to a collection of one class of pictures, especially landscapes of not very large size, and which must be viewed not far above the level of the eye, a low hanging ceiling over the centre of the room might have a very good effect (and has been suggested, in fact, for the landscape-gallery in Mr. E. M. Barry's design for the proposed new National Gallery), letting the spectator look upon an illuminated landscape before him while he is himself in shadow: a good effect, I mean, in regard to the pictures; for how it could have a good effect on the room, or how a room so constructed could be made to look well from an architectural point of view, it is not so easy to see. One other point, which has a bearing on the position of columns, pilasters, and other architectural features in contiguity to the pictures, is that the latter have a tendency to reflect light or bright-coloured objects near them, to some extent; but they will do this the less in proportion as they have an adequate supply of direct light: the better a picture is illuminated, subject to the conditions named above, the less will it be disturbed in effect by the reflections from objects in the room, or from the dresses of the spectators.

Artificial lighting would, of course, be governed by the same considerations as the admission of daylight, in regard to the position of the light. But in order to obtain that diffused quality of light which has been said to be desirable for pictures, the artificial light should, I think, be communicated through obscured glass, and this is another advantage which, I think, might be found in the double-skylight system, that the gaslight (which at present is the only light which can be used for artificial lighting) could be placed above the glass of the lower skylight, and thus the separate points of light from the gas-jets would be broken up into a mass of light. It does not appear to me that any position of gas-lights within a room, and communicating light directly to it, could be otherwise than disadvantageous to the effect of the pictures, in producing glittering reflections. Another advantage of such an arrangement as I have mentioned would be, that all heat and products of combustion from the gas could be kept out of the apartment altogether; and this is decidedly desirable in a permanent gallery, where the same pictures are to hang for years, or perhaps for generations. In 1859 a commission was appointed to inquire into the best method for the preservation of pictures, consisting of Messrs. Faraday, Hoffman, Tyndall, Redgrave, and Fowke, and the following quotation from their report shows that they attached some importance to keeping the pictures from the action of gas:—

"Coal-gas may be free from sulphuretted hydrogen compounds, and in London is so at the present time; it then has little or no effect upon pictures. But it has not yet been cleansed from sulphide of carbon, which, on combustion, yields sulphurous acid gas, capable of producing 22¼ grains of sulphuric acid per 100 cubic feet of present London coal-gas. It is not safe to permit this product of combustion to come in contact with pictures painted in either oil or water colours, and the commission are emphatically of opinion that in every system of permanent gas-lighting, for picture or sculpture galleries, provision should be made for the effectual exclusion or withdrawal of the products of combustion from the chambers containing works of art."

Another point, which is naturally connected with artificial lighting, is artificial warmth; and it must be remembered that an equable and moderate temperature is an essential element in the preservation of pictures. In a permanent gallery fires, for every reason, must, of course, be considered inadmissible; and probably the best possible way of warming such a gallery would be by hot-water pipes; the furnace for generating heat being placed in a fireproof vault, and, if possible, out of the building, as, for instance, in a quadrangular arrangement of building, the heating apparatus might be in a vault under the central court. An advantage of the hot-water system is the readiness with which the degree of heat can be regulated by shutting off the water from a portion of the pipes. The kind of heat communicated by hot-water pipes is also less dry and parching than that from most other contrivances for artificial heating. In order, however, to provide against too much dryness in the atmosphere of the room, the system has been adopted in the Berlin Gallery of placing a large vessel of water in each apartment, which is evaporated gradually by the warmth of the room, and imparts a certain degree of moisture to the air. Dr. Waagen gives it as his opinion, that this is "equally good for the pictures and for the public."

In regard to the question of the arrangement and classification of works of art, the distinction between permanent and periodical exhibitions is, of course, very great. The object of the latter is to give room for the exhibition of as many as possible of new works which come up to a certain standard; and as the style, character, and size of the works sent for exhibition can only be generally surmised beforehand, it is impossible to suit the arrangement of the rooms to the pictures in detail. It is generally considered sufficient if a separate apartment is provided for water-colour drawings, and another for sculpture. That the water-colour drawings, with a scale of tone and a range of effects so totally distinct from those of oil-painting, require to be exhibited separately, is obvious enough; but I cannot help thinking, that even in the case of annual exhibitions, a further classification of works might be carried out than is generally attempted; and that the possibility of doing this depends in a considerable degree upon the arrangement of the rooms. The Royal Academy Exhibition, even under its present improved conditions, is little more than a huge jumble of pictures, large works and small works, portraits, landscape and *genre* pictures, crowded together indiscriminately in a manner which renders it difficult for either the eye or the mind to do justice to any work depending for its effect upon more delicate treatment of colour or detail than those around it. The only approach to classification in the Academy consists in placing in one room (the north-east room) all the works contributed by the members of the new school of light, fresco-like painters,—Albert Moore, Armstrong, Barclay, and others. These pictures, with their light tints and absence of shadow, would be fairly killed by being placed singly in the midst of more heavily-toned pictures; but the same thing is the case, in a lesser degree, with works not differing so much in style: paintings on a large scale for instance, and paintings on a small scale, are a mutual injustice to each other, and cannot advantageously be studied when jumbled up together.

Now it would, I think, be quite possible to avoid this drawback, without entailing needless inconvenience on hanging committees, by planning galleries either with a range of smaller rooms for the exhibition of cabinet pictures, or (as small rooms are bad for circulating a crowd of spectators through) by so arranging the large rooms that screens can be placed for hanging the smaller works apart, while the large ones are hung on the main walls. There has been an excellent opportunity afforded of seeing how well such a system of hanging works, since the early part of last year, when Sir Richard Wallace, as *Punch* expresses it, "invented Bethnal-green" by lending his splendid collection to the new museum there, and making that comparatively humble suburb a centre of attraction to all lovers of art. I have never seen pictures so well arranged in any place where they were necessarily placed as close as they would go on the walls. The building, as you know, is part of the old Kensington edifice, the "Brompton boilers," re-erected in a new position. The upper floor consists of a wide gallery running all round, the centre portion being open from floor to roof; the building is lighted, if I remember rightly, by long skylights running longitudinally; the large paintings are all placed against the main wall, round the back of the gallery,—the smaller pictures, the Ostades, Terburgs, Meissoniers, and others of that class

are hung on each side of small separate screens placed close to the front of the gallery, leaving just sufficient room for spectators between the screen and the gallery railing. It was thus possible, when studying, for instance, the splendid specimens of the works of Meissonier and Decamps, to forget the larger pictures altogether, and to suit the eye to the scale and finish of the smaller ones; and I am sure that I came away from that gallery with a much more just idea of the genius of Meissonier, and of the splendid finish of his work, than I could possibly have gained if his exquisite little productions had been wedged in between larger pictures, and overshadowed by their projecting frames, as would have been the case had they been sent to the Academy for exhibition. On the other hand, the provision of a separate apartment for sculpture (I am speaking now of "periodical" galleries) is one open to question. As a general rule, sculpture requires a decided light in one direction, and not a top light, though a high light is of course best. It is partly for this reason that it is generally supposed necessary to provide a separate apartment for sculpture, as is done in Burlington House, where the sculpture sent for exhibition at the Academy is placed in the room opposite the entrance, which is the only one lighted by a side light. But there is a serious drawback to this, and one which I believe sculptors feel very keenly, that the room thus selected becomes, according to the general usage in regard to the treatment of sculpture galleries, the only colourless room in the place; and the effect on coming out of the picture-galleries into the sculpture-room is as if a sudden chill came over everything. If this is felt even by those who are enthusiastic lovers of sculptural art, it is far more so by the general public, who as a rule understand and care much less for sculpture than for pictures. The consequence always is that the sculpture is nearly deserted in exhibitions; and I am told, on good authority, that the sculptors hate the Academy sculpture-room, and regard it as a sort of den. Moreover, works of sculpture will not bear to be crowded together; one interferes with the view of another, and with the right appreciation of it; for no work of art so much requires undivided attention as a work of sculpture, if it is worth anything, does, owing to the highly conventional and abstract character of the art. For these reasons I think that in periodical exhibitions, where the precise arrangement of the building for the works exhibited is impossible, it is a great deal better to leave room for the principal sculptural works to be placed in isolated positions in the picture-galleries. They have far more chance of receiving proper attention there; each work serves as a kind of centre for the eye to dwell upon, while the pure white of the marble rather tends to heighten the effect of the pictures than otherwise, care being taken that the sculptures are not placed so as to throw any injurious reflections on any of the pictures. In the International Exhibition galleries a good many of the sculptured works are placed down the centre of the picture-galleries, on pedestals alternating with vases and other objects of the like nature; an arrangement which adds very much indeed to the general effect, and by which the statues are on the whole fairly seen, although the room is too narrow, and the light too immediately above them to be considered entirely satisfactory. A better arrangement, when wall space can be spared for it, is to place the statues against the side of the room at intervals, as the important desideratum of a principal light in one direction and on one side is thus secured for them; this was done with some of the principal statues in the 1862 Exhibition, and I well remember the effect of Lough's splendid figure of "Comus" thus placed, half-way up the English gallery. This, of course, can only be when a wall is not crowded to its fullest capacity with paintings; but on the whole I think that sculpture would be much better served in periodical exhibitions by being placed in the general picture-galleries; and that the sculptors would be willing to compound with some disadvantages of lighting in order to secure a position where their works would form central and important objects, instead of being penned together like a collection of curiosities in one room, where they suffer far more from crowding and close juxta-position than pictures do. So much as to the possibility of classification in periodical exhibition galleries. When we come to consider the question in regard to a permanent gallery, the necessity for definite arrangement and classification of the works, and the provision for this in the building, become more distinctly obvious; and no such gallery can be considered a good or a satisfactory one which does not provide for every class of work, and every individual work, being seen to the best advantage, optically and æsthetically. And the first and broadest distinction which can be drawn is as between large and small works. Large pictures, containing broad masses of light and colour, and requiring to be contemplated from a distance as a great whole, ought certainly not to be placed in the same room and under the same light with small cabinet works, depending for their effect upon delicacy of detail and elaboration. This has been recognised in some of the best and most celebrated art-galleries,—in the Pinacothek at Munich, for instance. Here the larger works are hung in the grand saloons, which are 42 ft. wide, 52 ft. high to the top light, and 31 ft. to the cornice (I do not know if the pictures are hung up to the level of the cornice,—if so, I think it is too high to hang any but colossal pictures); and the smaller works, chiefly of the Flemish school, are arranged in a series of small rooms at the side, with a side-light to the north. Our present National Gallery is a most unhappy example of utter unsuitability in this respect; and I have no doubt that the effect of the splendid collection of Flemish pictures lately bought from Sir Robert Peel is very much marred by their being arranged in a mass around a large room, instead of being placed in smaller apartments more suitably designed and lighted for such pictures. And here, reverting for a moment to the subject of lighting, we may notice the principal exception to the general rule as to top-lighting for pictures. Sir Charles Eastlake has laid it down that, while large pictures require to be distant from the eye and from the light, small pictures should be near the eye and near the light; and therefore in many cases, at least, their conditions of lighting would be best met by a small room and a side-light. It would be important, however, to consider at what angle the light should fall on the picture, and what should be its relative position in regard to the picture and the spectator, so as to afford the best result. A square room, as shown in the Munich Gallery, is not a very scientific form, for the light could not possibly be good for the pictures on the opposite wall unless it were a very high one, in which case, as a side-light, it would be bad for the works on the side-walls near the window. Reflections of light from the pictures, when considered horizontally, are found to be confined to the space bounded by lines connecting the extremities of the light with the extremities of the picture, *and* to a space enclosed by lines forming an angle of 30° with those bounding lines at the edge of the picture. Applying this to a square room with side-light, it will be found that scarcely any portion of the wall opposite the window would be available for satisfactory inspection of pictures, particularly if under glass. The plan proposed by Sir Charles Eastlake for utilising side-light, was to have a gallery lighted at both sides by windows at intervals, going nearly to the top of the room, and then to subdivide this by screens or partitions placed at an angle of about 62° with the wall, in alternate directions. The effect of this obviously is to reduce the wall opposite each window, which is a bad position, and increase the area of the side walls. This is very ingenious, although less satisfactory to the architectural mind, no doubt, than a square room; and besides the advantage over the square apartment, the inner and narrower side of the room could be utilised as a place for a statue, which, with the opposite window kept high, as suggested, would be as good a situation for sculpture in combination with painting as, in all probability, could possibly be obtained. The *sides* of the room, it is true, are for the most part at a less advantageous angle for pictures than in a square room, so far as reflections are concerned, and perhaps a lesser angle than 62° might be better, but the plan combines several advantages in regard to economy of space and effective arrangement. On a larger scale, too, it might be worked into a circular building, in a very symmetrical form, and with a great amount of hanging space in proportion to the area of the building. I do not, however, mean to infer that a top light would not be the best for cabinet pictures also, could the light be brought low enough to be near them; but in a large building, the other apartments of which would be much loftier, it might be difficult in many cases to secure a low top-light for the smaller pictures, especially having regard to the difficulty before alluded to, of so placing the lower skylights as not to have their light robbed by the higher portions of the building.

The question of classification in a gallery of art, however, includes much more than the mere division into large and small works,—comprising, in fact, the whole system or principle on which the collection should be arranged; for a collection without a definite principle of arrangement loses half its value either as an opportunity of study or of enjoyment. A very long gallery filled from end to end with pictures of various classes and nationalities, even if well classed as to the size of the paintings, is a somewhat wearisome way of arranging, or rather a neglect of arrangement; both the eye and the mind are dissatisfied with such a maze of works, and require, as it were, a division into chapters, each with its own heading, to form a kind of resting-place. Assuming, then, on this if on no other ground, that works of art should be arranged rather in a succession of smaller rooms than in one or two very large ones, upon what principle are they to be grouped? There are two main principles, more comprehensive than any others, which may be followed, viz., a classification as to class of subject, or as to schools of painting. The adoption of either of these in its entirety must have a very distinct effect on the planning and arrangement of the rooms.

If the division by class of subject be adopted, this arrangement will naturally, or *ought* naturally, to lead to a considerable diversity in the size, proportions, and lighting in the rooms respectively devoted to large historic subjects, to landscape, and to *genre*. If the division into different schools be adopted, the rooms will be more uniform in dimensions and arrangement, being adapted for a generally advantageous display of works varying in subject; the only marked difference which would be forced upon the architect would be in the case of schools of painting, which, like the old Dutch and Flemish, deal almost entirely in comparatively small works of high finish, and which therefore, as already observed, would require smaller and differently lighted rooms. Which of these arrangements would answer the end of such an institution best must depend very much on what we consider that end to be. If it is for elucidating and giving opportunities for the study of the history of painting, there can be little doubt that the classification according to schools is the most useful, the more so if arranged chronologically. One drawback to this is, that to complete the chronological sequence, works of little artistic beauty or power must often be introduced, illustrating the childish beginnings or the feeble decline of a national art. If, on the other hand, the object is the study of painting as one of the imitative arts, as the art of transferring various aspects and incidents of nature to canvas, and giving them more or less of *vraisemblance*, then the division into classes of subject would be more to the purpose: the spectator would then see before him the various ways of looking at nature to which different countries and their artists had habituated themselves, the various points of view from which the same objects may be regarded, and the various kinds of interest which the painter can extract from them or infuse into them. I am inclined to think this would be the more instructive as well as the more pleasurable arrangement. The chronological history of art can be learned from books, and is after all but the dry skeleton of the matter, of which the pictures themselves are the living reality. In other words, it is of more consequence that people should learn to understand and feel the real interest and beauty of a fine painting, and its relation to natural beauty (which is a very subtle subject), than that they should learn that it is of such a school, and that such an artist was the head of the school, and such others were his pupils and followers. But, perhaps, a middle course between the two might be followed by a division, not into "schools" (which are often mere different sets of mannerisms), but into nationalities,— French, English, Italian, Russian, &c. (for the Russians are going to be a very remarkable people in the way of art),—each nation having a large room for its larger pictures, grouped according to centuries, and a small room for its smaller works. I think this would be perhaps the most interesting way of combining enjoyment with instruction in a large gallery of art; for national difference in feeling and style in art is a very great and deep-seated distinction, showing itself not only in the various methods of execution employed, but in the way

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of looking at nature, in the preference for this or that class of subject, &c.; and philosophical as well as artistic lessons might be derived therefrom.

ART IN IRELAND.

AT the last meeting of the Architectural Association of Ireland, Mr. Henry MacManus, R.H.A., read a paper on the "Geography of Architecture," a portion of which we print:—

About the year 1750—the brightest period of our modern history, which dawned like a sudden morning-light after a dark tempestuous night—we are struck with astonishment at the energy employed to cultivate the fine arts in Ireland. A new dynasty was seated on the throne of these realms, and the resident gentry, relying on the Act of Settlement, vied with each other in their efforts to serve their country by promoting its material welfare. Among the nobility, the names of Lord Duncannon, the Earl of Lanesborough, the Duke of Leinster, Lord Newtoun, and Lord Ranelagh stand foremost. The clergy were the most active in the resuscitation of Ireland; the names of the Rev. Dr. Samuel Madden, Rev. Charles Jones, Rev. Dr. Henry, Dean Maturin, the Bishop of Ossory, and Rev. Dr. Barrington, are recorded by their deeds; and private gentlemen, such as William Maple, John Putland, David La Touche, Arthur Pomeroy, Holt Waring, Jones Ford, Dr. Prior, Dr. Weld, and Mr. Caldwell, have also distinguished themselves by their patriotic endeavours.

As early as 1738, Dr. Madden, the originator of that art movement in Ireland, in an enlightened address to the nobility and gentry, among other good and cogent reasons for establishing an art institution, gives the following:—"The fine arts have always been considered by all cultivated nations as the greatest ornaments and elegancies of every country, so that the utter neglect of them that prevails in Ireland will ever be a proof against us of barbarism and Gothic ignorance till we shall shake it off." And again:—"When the necessities and conveniences of nature are sufficiently provided for, the art of delight and amusement will constantly come in, and if we do not bring them to us we will be apt to go abroad to them; since we must have luxury we should encourage that kind of it which has the most of pleasure and the least vice in it."

In 1757 my Lord Duncannon writes from the Continent to the Dublin Society:—"The art of designing is of the greatest use, not only in the polite arts, but through every manufacture, and this the French have proved since the establishment of their Academy by supplying nearly the whole world with their fashions. Had the Parliament thought proper to appropriate the absentee pension-tax to this very worthy and great work, it would have done the business completely, and much to our honour." Four years later the Parliament granted 12,000*l.* for sundry purposes. From that time we find the so-called Classic style of architecture making its appearance in this country. The names of the noblemen who introduced good architecture amongst us are:—Charlemont, Portarlington, Powerscourt, Cunningham, and Beresford. Through their exertions sprang up, as if by enchantment, those beautiful structures, the pride of our capital and the admiration of all visitors of taste or ordinary intelligence: they are the work of one generation of noble Irishmen. Cassels, Wilkins, Vallancy, and Gandon were strangers that were principally engaged in these works, though by that time we had native architects capable of whatever was required of them, and in all directions throughout the country the gentry were building, as if in wholesome rivalry, abbeys and castellated mansions with banqueting-halls, turreted towers, barbican-gates, court-yards, and terraces. These found artists in the Morrisons, Papworth, Baker, Johnston, Murray, and *Capability* Brown,—picturesque dwellings that mark the splendour of a resident nobility, and inspire admiration.

Up till that time there was nothing in the way of architecture that had any recognised existence: there were only the old ruined castles of the Pale, and a few scattered, bald, heavy-roofed, rueful-looking manor-houses with segment-top windows in the lowest Dutch taste staring from the end of a straight avenue of lime-trees. It was here that the descendants of the settlers of Cromwell or William aroused the echoes at early morn,—a lusty, hard-drinking, hard-headed race, fond of hunting and good cheer, but, alas! entirely indifferent to the civilising influence of the arts. Meantime, sculpture was represented in Ireland by two foreigners,—Rysbaech and Van Nost. The recumbent statue of Dean Drillincourt is of the best class of the day, and that of Prior, by Van Nost, is very respectable. Van Nost was patronised by the Royal Dublin Society, and taught most of the rising sculptors of his day. His works, by the way, have the contorted and fluttering air of Roubiliac and Bernini made utterly grotesque by the minuet attitude of Lucas and other figures of the same kind in our monumental sculpture.

Let us now glance at the three societies which arose in these realms in imitation of the school in Paris. The one in London indirectly helped the life-school of St. Martin's-lane, which produced those men who, under the Royal protection, became the Royal Academy of Arts. It was subject to the vicissitudes common to infant institutions, and was removed from Spring Gardens to Somerset House; thence to the National Gallery, Trafalgar-square; and lastly to a home of its own in Burlington House, Piccadilly.

In advocating the existence of academies, their first president says:—"The principal advantage of an academy is, that besides furnishing able men to direct the student, it will be a repository for the great examples of art. The student *perceives* and *receives* at one glance the *principles* that many artists spend their lives in ascertaining."

Edinburgh had *her* drawing-school in a garret in High-street, at a rent of 5*l.* per annum!

From the fact that the Royal Academy in London was open to North British artists no academy was incorporated in Scotland until 1826, just two years after the Royal Hibernian Academy was founded by charter in 1824. The delay arose from the same cause in both cases. Two rival societies of artists in Ireland existed fifty years before one of them was incorporated by royal charter in 1824.

Holding sacred the opinion of Sir Joshua Reynolds, it is needless to say that the object of these three academies of art is identical. The drawing-schools of the Dublin Society were at first in Mr. West's Academy, in George-lane, and continued there until Mrs. M'Mullen's rooms, in Shaw's-court (now Commercial-buildings), were rented by the Society at 30*l.* per annum. Next we find the institution housed in Grafton-street, then in Hawkins-street (now a theatre), until, in 1815, the Society purchased Leinster House. This time-honoured institution deserves more than a passing word, though, indeed, it generally speaks pretty loudly for itself; but this is permitted only on holiday occasions, and we rejoice with it. The Dublin Society had been founded seventy years, and supported by an Irish State grant fifty years, before the union of our Parliament with that of Great Britain, an event the possibility of which was never contemplated by its noble founders, who had established it in the spirit of a great national institution, in which the gentry and nobility of the country were to unite in developing its mental and physical resources. It is needless to say, that ever since that event in our history, which occurred at the beginning of the present century, the arts and the functions of the parent society have undergone a certain *ab*action, if I may be allowed the expression, as injurious to them as it is fatal to all peaceful development of national feeling.

The following remarks will show, by inference, what the Society might have done had it been left to the fostering care of a resident gentry and local Parliament. Some distinguished artists who were taught in this Society, with a list of their English compeers, must go far to soothe our national vanity as to our capacity for art, though we must deplore the interruption of its progress, however expedient, on other accounts; yet this roll of time-honoured names must first acknowledge the fact that it gives none to correspond with those of Hogarth, Reynolds, Romney, or Gainsborough. These painters flourished fifty years before Ireland had an academy, but their names are in their way unapproachable. Francis Danby ranks with Turner in landscape, Mulready with Wilkie, Behnes with Chantrey, Foley with Flaxman, Barry with Haydon, Maclise with Etty, Comerford with Ross, and Irish Hamilton, Hone, Chinnery, Shee, Cumming, and Cregan need not yield to Owen, Hopner, Beechy, Briggs, Jackson, Lawrence, or Opie, as first-class in portraiture; while Irish Peters, Tresham, Heaphy, and Rothwell may rank with the painters Hilton, Howard, Bird, Drummond, and others who worked for history or illustrated the beautiful incidents of life. Most of these men belong either to the end of the last or to the beginning of the present century, and are identified with the old order of things.

The names of artists get so mixed up together by writers and speakers on both sides of the Channel that we shall presently be done out of our fair claim to the merits of our distinguished countrymen. The inter-communication of Irish with English artists has not tended to the production of a national style of art in either country, therefore our efforts in spite of us come under the general head of British art.

The works of Irish artists exhibit at no time a distinct nationality, either in subject or treatment. British art, as it stands, exhibits a simple unity of purpose,—namely, to sell, the public taste being the standard aimed at.

If we wish to bring forward Irish art, we must retrace our steps eight centuries; then indeed we may claim for Ireland the highest reputation for ornamental art, acknowledged by all who have the capacity to judge of it, compared with the productions of other nations,—Indian, Persian, Greek, Roman, or Arabic. It is still here to maintain its undisputed claim to be the finest conventional ornamentation in existence.

There is no saying how far the fine arts might have advanced in this country but for the disturbance caused by its altered position seventy years ago. The accounts of this period present a Babel of conflicting interests and opinions, and show the evils of a community demoralised in the extreme,—a hopeful nationality disintegrated at one stroke,—and exhibit, unhappily, the corrupt materials consequent upon such a state. Political and social disorder oppressed the country like a nightmare, and weighed it down for years,—"It became treason to love; it was death to defend." But lovely woman interceded for the vanquished,—our patriotic women whose writings prepared the way for a better understanding with our neighbours, who lent a not unwilling ear to their sweet influence. . . .

On the occasion of the royal visit in 1821 the Society was made a royal institution. The Royal Hibernian Academy was incorporated, and the smiles of royalty shed a gleam of hope throughout the land. One of the first acts of the Society on entering its new residence in Kildare-street was to move for a Wellington testimonial in the park. So much space was required for the library, museum, chemistry, and natural philosophy departments that the drawing-schools were nearly forgotten, and were at this time housed in the hay-loft. Indeed, these schools suffered much, not only from want of accommodation, but also from insufficiency of instruction. For a whole century it was the boast of the Society that the figure-school was under a Mr. West, who was the pupil of Vanloo. In 1730 Mr. West died and was succeeded by his son Francis, who had been his father's pupil. This Francis West also died, and was in like manner succeeded by *his* son, who had also been taught by his father. So that for a period of 110 years the figure was taught by this trio in succession, each less capable than the other,—the elder West being simply figure-draughtsman and no artist whatever. It is well for the Irish student of this time that the last West died an old bachelor. To make this state of things more unfortunate still, the Society, about forty years ago, suffered both in dignity and finance through the impolitic and overbearing conduct of Chief Secretary Grant. The schools, however, such as they were, found a friend and supporter in Isaac Weld. William Carey lectured on the fine arts; Mr. Pomeroy and General Vallancy did what they could as chairmen. Captain Davis encouraged lithography on its first appearance; but notwithstanding these efforts the Society became nearly worn out; its art schools were a reproach, the objects in the museum broken and dusty, used-up old porters, old and incompetent officers, it seemed on the verge of ruin. But a new epoch was approaching. The state of local politics made it imperative for the Government to take her by the hand (hold out her hand), and to assist this fine old but much-abused institution. Since that time a new generation has sprung up to witness the Society in a higher state of efficiency than ever it had attained before.

Ireland since the Union can boast only of one first-class portrait-painter, and, before photography, but of one miniature-painter, but of no

figure or landscape painter of eminence. Though we cannot of late support artists of any standing, we indulge in the absurd propensity of taking credit to ourselves for the reputation our countrymen obtain in other parts of the world whither they go to earn their bread. "What cannot be cured must be endured," but we have no right to boast of having distinguished men who owe us nothing but their birth, and possibly a considerable deal of suffering before they left us. Foley had made his fortune before we heard of him, and now we thrust honours upon him he could well dispense with. Hogan was permitted to live amongst us in poverty, and when he died every one crowded at his funeral quite unabashed at their neglect of him while he lived. Behnes, whose head of Clarkson equals the best of Chantrey's busts, died in Middlesex Hospital! Now if we could point out a spot on this island that contains even one work by Maclise, Mulready, Danby, or Behnes, it would go some way to excuse the taste we have for appropriating to ourselves the credit due to others. We need not point to one particular class who are indifferent to art; we may say that all are alike in this respect.

Yet, after all this, we still labour under the delusion that we are a nation. We were so once, and had trades and manufactures of our own; but they have gone, and we have become simply salesmen for the manufactures of other countries. The trades have gone with the old guilds. Where are our gold and silver smiths gone? With Saint Loy to Birmingham, Sheffield, and London. From the time we open our eyes in the morning till we close them again at night we see nothing of *Irish* manufacture or workmanship, if we except those rude atrocities known as bog-oak ornaments, which are purchased by visitors to this country, and called, as if in derision, "Irish manufacture." And yet our idea of Irish trade is still associated in our minds with ingenious and contented workmen making at home the objects we see around us, but the idea has changed its significance, and now really means trading in wares; and this view of it is to be found in the code of moral sentiments among chapmen since the time that Jacob higgled with Laban.

In the year 1849 the Government established schools of design in this country. They had already an existence in England and Scotland. Their object was to train designers to assist the manufacturer who desired to compete with France in the market. But so little did the Government of that day understand of the relations of manufacture to art, that Lord Clarendon, anxious to advance the manufactures of this country, imagined this would be best done by getting up schools of design. It has since been discovered that the manufacturers must first exist, and then a cultivated taste in the customer will demand beauty in pattern. For this purpose the present Schools of Art were organised, where the elements of practical art are taught to all ranks, from the palace to the hovel, under the care of an enlightened administration. The success attending these schools is well known, and has called forth many a noble panegyric.

I proposed to draw your attention to the circumstances which have influenced the fine arts in Ireland, and I have done so to the best of my ability within the time allotted me. I have shown you that the fine arts were introduced into this country by a resident gentry, and at whose departure from the country they languished. I have shown you how attempts were made to create manufactures amongst us in lieu of the trade we lost by the union with England, and that they resulted in failure. I have intimated that we are only a nation of agents for foreign houses. I have endeavoured to show you that we have a capacity for everything except governing; that our sagacity cannot suspect the insidious approaches of what must ultimately ruin our national honour; and that we are at this moment blind to the fact that we are imperceptibly but surely controlled by those who only understand our weak side, our vanity, and that, provided we get a pretty shadow, we do not mind who takes the bone. This is called progress, and so it is, but it is a circus progress, with a whip in the middle and a body of clowns and mountebanks making smaller gyrations within it.

These facts put together may convey this lesson,—namely, those who cannot govern themselves must permit others to direct them; whether for good or evil, will depend upon the part we ourselves take in it.

GREENWICH ROYAL NAVAL COLLEGE AND SCHOOL: NEW WORKS.

IN the *Builder* of February 1st, we gave some particulars concerning the internal structural changes in Greenwich Hospital, and additional works on the other side of the highway, in connexion with the Royal Naval School. The four grand blocks, each having a spacious inner quadrangle, were appropriated to the accommodation of retired admirals, commodores, captains, commanders, pursers, and all grades of officers, petty and pettier, as well as to a host of old salts, men before the mast, who had their berths some in one great room, labelled, it may be, on the lintel,—"The *Howe*, 13 men"; or, "The *Princess Caroline*;" or, "The *Royal Charles*"; which we remember as the show-ward, where the fanciful old tars had their sleeping-berths,—they could not be called hammocks,—curiously adorned. All these have been swept away, with compensation to the former inmates proportioned to their rank and influence. A number of the officers retired upon full pay, with allowance for their "emoluments,"—an unknown quantity to any one but themselves, until they were required to "declare." One,—perhaps more,—of the officers made a claim for the value of his pew, hitherto free, in the hospital chapel; and another, it is stated, actually scheduled the Admiralty for his *funeral expenses*. Short work was made with the old salts, who, simple-minded men, did as they were ordered, and, old and done up, took what they could get. The hospital was emptied of the tenants for whom it was intended, and the question arose,—"What shall we do with it?" To make it a Royal Naval College is probably the best use to which it could be put, and there is every prospect that, applied to this purpose, Greenwich Hospital will again lift up its head, and become a great national institution. During the first three months about sixty students have entered as cadets at the Greenwich Royal Naval College.

The adaptations of the buildings to their new uses will not be completed before October. It is believed that after that time the college will have 200 students under instruction and training. In the meantime, as we have seen, the students that have already entered are well accommodated and cared for. They are under proper discipline and control as regards training and teaching, and for recreation are provided with billiard-rooms, reading-rooms, baths, &c., and have rooms spacious enough and so fitly furnished as to satisfy any one but the veriest sybarite.

In addition to the gymnasium, to which we formerly referred, a new laundry and bakery at the east end of the Royal School area are in progress. The new buildings will have one side elevation to Park-row, better known, perhaps, as "Teapot-row," and the other to the west. The premises will have an entrance near the Park gates. The laundry and bakery are designed to serve for the 800 boys and the resident officers in the Royal Naval School, and also, if need require, for the 200 students, and professors and officers who may be in the adjoining college.

The new laundry will be 85 ft. 6 in. in length by 35 ft. inside, with 18-inch walls. The bakery is 59 ft. by 24 ft., and has attached to it a brew-house for working the yeast required. It has two large ovens, each 10 ft. by 6 ft. in the clear, with passages on each side and at the back. The working-room of the bakery is 25 ft. by 21 ft. 6 in. It has two troughs for mixing the sponge, each 25 ft. long by 4 ft. wide at the top.

The wash-house is 32 ft. by 30 ft., and will be furnished with two large washing-machines, two drainers and rinsers. It has adjoining it a large receiving-room for clothes that have come in to be washed, and in another place a large mending-room for the clean clothes. The wash-house is besides fitted up with bins for the reception of dirty linen, sorted. It has a drying-closet, heated by steam, supplied with fourteen long and high sliding clothes-horses. A store-room and the matron's office adjoin the wash-house. In addition to the other machines already named it has two hydro-extractors, and it may here be stated that in driving the washing-machines, drainers, and rinsers, in working the hydro-extractors, and wherever it can be applied, steam-power will be employed. In the mangling-room, 34 ft. by 18 ft., there will be two large mangles. The ironing-room, which is 38 ft. by 18 ft., will have a proper stove, and near it two radiating clothes-racks. It is furnished with four long ironing-tables, each 3 ft. wide.

Above the laundry there are rooms for the man in charge, and others for miscellaneous purposes. In the basement there are boiler-rooms and a disinfecting-room. The foundations are upon concrete that is laid upon the natural gravel. The whole of the work is done in bricks from Chatham, made by the convicts, the facings being of picked Chatham bricks and the dressings of red brick.

The buildings are to be covered by bound roofs with a raised lantern along the ridge, with opening sashes for ventilation.

The power will be supplied by a 6-horse power high-pressure horizontal engine, combining the most recent improvements. The engine will be served by two 10-horse power Cornish boilers with one flue each. The boilers to be of the best Staffordshire plates, and with Low Moor plates over the flues. The boilers to be tested to 120 lb. pressure to the square inch. The engine, boilers, tanks, shafting, washing, mangling, baking, and other machinery, are estimated to cost 1,545*l.*, including setting, fitting, and all appurtenances.

The works are designed by Colonel Sir Andrew Clarke, R.E., C.B., director of Admiralty works; Mr. Loughborough clerk of the works. The execution of the constructive portion is in the very competent hands of Messrs. George Smith & Co., contractors, of Great George-street, Westminster.

THE SHEFFIELD NEW STEEL AND IRON WORKS BUILDINGS.

A VERY extensive block of buildings for the Sheffield Steel and Iron Works Company, who intend to carry on business on an unusually comprehensive scale, has just been completed. These works, in which the Bessemer process will be a prominent feature of manufacture, are perhaps on a scale of greater magnitude than any similar establishment in the country. The buildings already erected, and premises in connexion, cover an area of 15 acres, and, with the view of still further enlargements, the company have purchased an additional 15 acres of land immediately adjoining the already erected works, which are conveniently situated a short distance from the centre of the town, and close to both the railway and canal.

The buildings include the rail-mill, 400 ft. in length, 50 ft. high, and 60 ft. in depth. This portion of the establishment is supplied with powerful mills and machinery, and its great capacity may be conceived when it is stated that it is equal to the production of 4,000 tons of steel rails per month. It contains seven boilers and fourteen furnaces, together with several rolling-mills for the manufacture of steel-boiler plates, and also special mills for the company's particular make of steel.

The Bessemer House, which adjoins the rail-mill, is one of the most prominent buildings in the block, and replete with apparatus and machinery for carrying out the Bessemer process of steel manufacture. Within this building there are no less than six "converters" of iron into steel, each "converter" having a capacity of six tons. There are also twelve cupolas, from which the iron is passed into the "converters," six hydraulic cranes, and a pair of hydraulic pumps to work the accumulator and cranes. The blowing-engines used in the Bessemer process at these works have steam cylinders 40 in. in diameter, and the blowing-cylinders 60 in. in diameter. This machinery admits of the production of 2,000 tons of steel per week.

The tyre-mill is another portion of the buildings. It is 170 ft. in length, by 130 ft. in depth, and the machinery is equal to the manufacture and finish of 1,000 tyres per week.

The spring shop is a large and important portion of the works. It is 34 ft. in height, and the roof covers an area of 386 ft. by 136 ft. In this building several departments are carried on, including rolling, forging, fitting, &c. It contains fifteen furnaces, sixteen water-tanks, and ninety-six fitting-places, and amongst various other articles manufactured here it may be stated that all kinds of railway-springs are made within it.

In addition to the several buildings already mentioned, there are also departments specially devoted to smiths, founders, buffer-makers, axle-makers, carpenters, and engineers, besides separate buildings for the draughtsmen's offices, and the general offices of the establishment.

ACTON LOCAL BOARD OFFICES.

THE erection of distinct buildings for parish purposes is a distinguishing feature of the present time. The accompanying engravings illustrate the offices which have been recently completed for the Local Board of Acton, Middlesex. The building stands by the side of the main road from London to Uxbridge, at the entrance to the Steyne, and was erected from the designs and under the superintendence of Mr. Edward Monson, at the cost of 2,000*l.*, including the fence-walls.

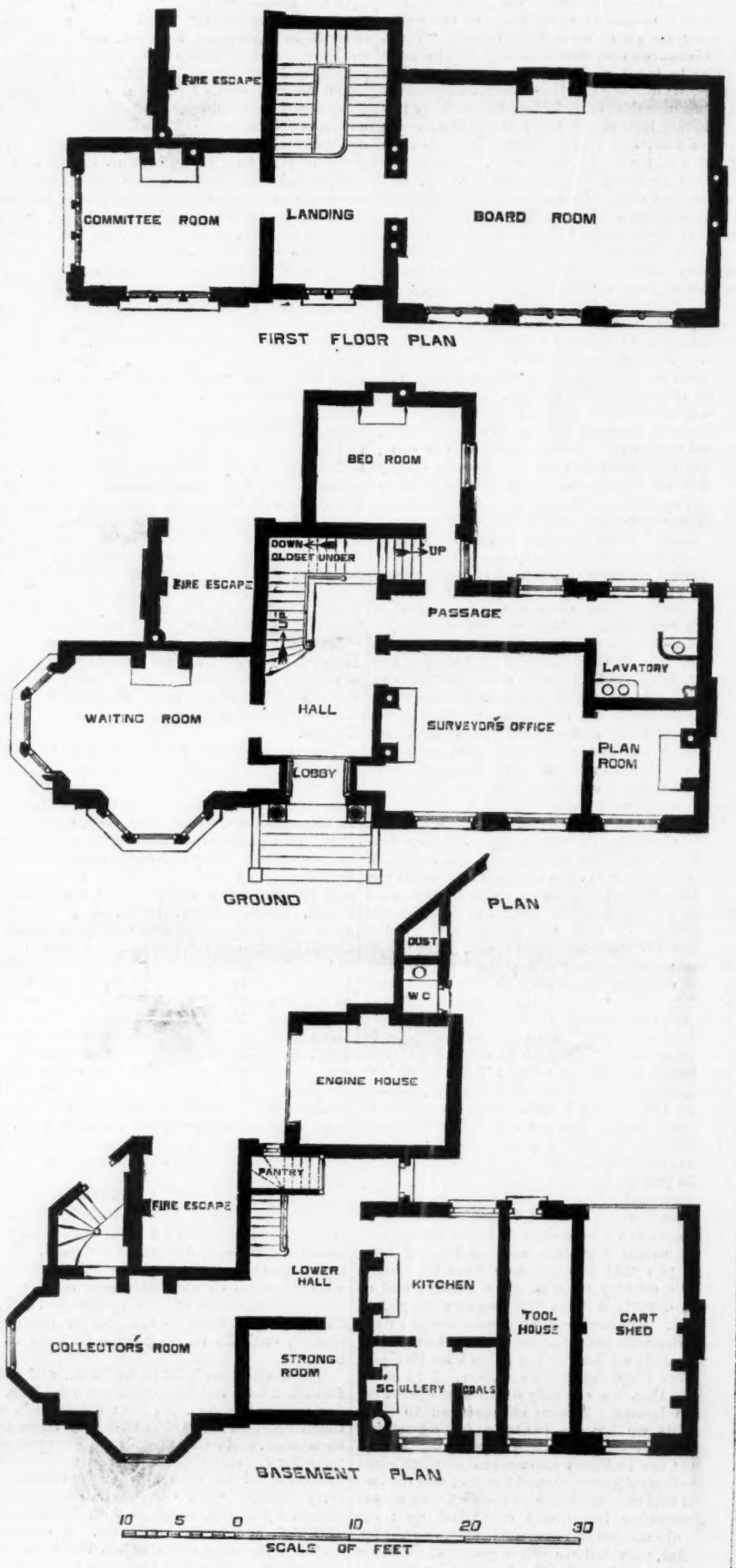
The materials used are stock bricks, relieved with cement dressings. At the end nearest to Ealing parish are two bay-windows. The south front of the main building is brought forward so as to present a good face to the main thoroughfare, and to admit of the main entrance. The front doors are of oak, which shut back into recesses so as to form the sides of the lobby; while the inner doors are of mahogany. The columns to the front door are of Mansfield stone, with Portland cement caps. All the windows on the ground-floor have cast caps, and the Board-room windows have enriched heads, drip mouldings, and ornamented blocks, supported by Mansfield stone columns. Level with the ground at the back are the engine-house and the fire-escape-house,—the latter having an entrance sufficiently high to admit the escape without being lowered, and sufficiently commodious to admit of drill for the men in wet weather,—together in one yard, quite unconnected with the offices. The tool-house for the workmen, as well as the cart-shed, are also entered without interfering with the housekeeper's part of the building. The housekeeper has a living-room, a scullery, and coal-house in the basement, with a bedroom approached by a separate staircase, quite isolated from the main entrance. Under the hall, which has a fireproof floor, and is paved with Minton's encaustic tiles, is the strong-room, and adjoining this is the collector's room, which can be entered either from the Steyne or by the main entrance on the ground-floor. On the right, as the visitor enters, is the surveyor's office, through which is the plan-room, and at the back of this is the lavatory, with modern fittings, by Jennings. The walls of the latter are partly lined with white tiles. On the left of the surveyor's office is a commodious room, with two bay windows. The main staircase, leading to the first-floor, is of Portland stone, and is lighted from the top by a lantern. The Board-room is 27 ft. long by 18 ft. 6 in. wide, and 14 ft. high, and opposite to it is the committee-room. The whole of the external walls are 14 in. thick, covered inside with Keene's cement, on a Portland cement ground, and painted. The doors to the principal rooms are of mahogany. The Board-room is lighted with one of Strode's sun-burners, and the others have bronze pendants. There are cement skirtings to each room, and provision for ventilation. The various rooms are fitted with marble chimney-pieces, that in the Board-room being of Sienna and statuary marble. The contractors were Messrs. A. & J. Blick; the stonework was executed by Mr. Mence; the plumbing, by Mr. Sutcliffe; the gasfitting, by Mr. Mason; and the plastering, by Mr. Nichols, all of Acton.

The building will be found useful for other purposes besides those strictly official.

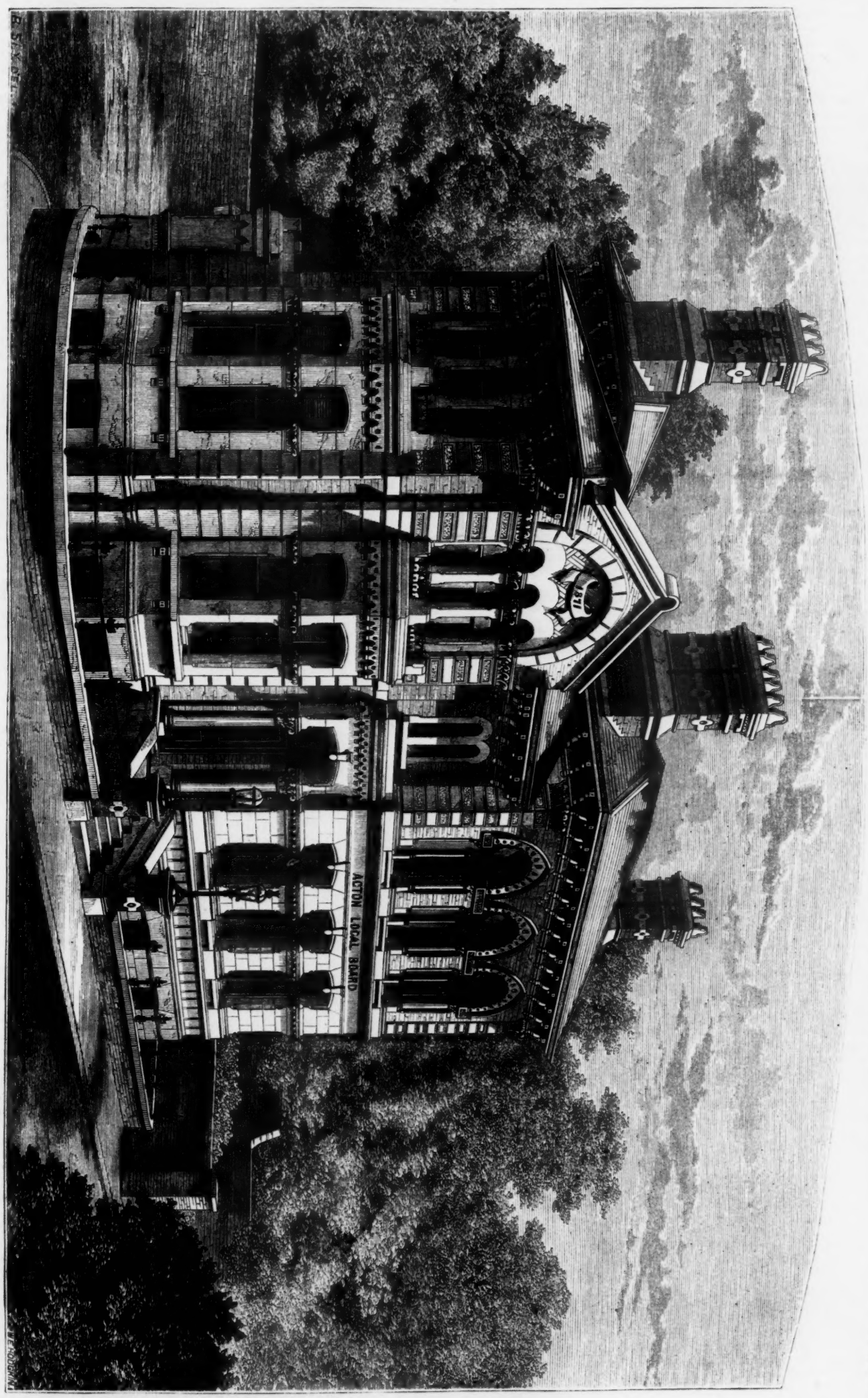
SANITARY CONDITION OF SHIPS.

WHEN, years ago, we first drew attention to the condition of our ships in a sanitary point of view, sneers, not to say laughter, were the response. The existence of the evils complained of, and the necessity for remedy were but slowly admitted. At the present moment, it seems that the crews of her Majesty's ships *Doris* and *Narcissus* are suffering severely from enteric fever, induced, it is stated, by bad water, dirty bilges, and deficient ventilation. It is reported, indeed, that there were no less than thirty-eight cases of fever on board the *Doris*. The *Lancet*, commenting on this says:—"Unpleasant facts of this sort intensify the importance of having a medical officer conversant with hygiene attached to the constructor's department of the navy, whose special duty shall be to confer with the official naval architects on all points relating to ventilation, whether in the cabins, 'tween decks, or hold of the ship."

Would not a sanitary engineer seem rather to be the man required? However, whether it be a competent doctor with engineering knowledge or an engineer with hygienic knowledge, we will not complain, provided the proper knowledge be there, and be rightly applied.



NEW OFFICES FOR THE LOCAL BOARD, ACTON, MIDDLESEX.



ACTON LOCAL BOARD OFFICES.—Mr. Edward Monson, Architect.

DILAPIDATIONS DISCUSSED.

IN the course of the paper on "Dilapidations," by Mr. Fletcher, referred to in our last, the writer said :—

I wish to call attention to the custom, on certain estates where the freeholders are peers of the realm (I do not wish to allude more particularly to the freeholders), on the near determination to arrange terms of renewal with the occupying tenant, and when these are fully arranged, and the agreement embodying them signed, to require payment in *cash* for the dilapidations under the old lease. Can anything be advanced in favour of such a claim? I venture to say all will agree with me in saying *No*. There is not a *scintilla* of justice in the claim. What right has the freeholder to that money? Not one iota. The position is this : the lessor says, "I will repair and surrender to you, in accordance with the covenants of the lease under which I hold; but if we can arrange terms of renewal, it will suit me better" (because either his business will suffer from removal, or, if a private house, he wishes to avoid the expense connected with a removal). The negotiation continues carefully, in many cases extended by the freeholder's agent; so that no time is left in which to do the repairs under the present or existing lease. The new agreement signed, the tenant feels happy; he thinks,—poor innocent fellow!—that he has nothing to do but make the alterations and outlay agreed to in such new agreement, within the time specified therein, and he is free. What are his feelings, and what would be those of my hearers, if such a case happened to them, when the freeholder's surveyor comes in, a few days before the expiry of the lease, to take a schedule of the dilapidations? To the indignant reply of the tenant, "There can be none; I have the new lease, and have agreed to improve the property, and fully repair," comes the calm reply of this great freeholder's agent! "The new agreement in no way affects your liability under the old lease, and as to-morrow that old lease expires, there will be no time to do the repairs, and I shall therefore require the amount or value thereof paid in cash." Such an instance of injustice has happened only too often in my experience. On what ground can the freeholder justify the receipt of money? What loss has he sustained? The new lease is valued by his surveyor as if it were in thorough repair, and the valuation is so taken by the lessee. Surely you cannot admire such practice, and therefore it behoves us all, as far as lies in our power, to prevent such extortion, which, curiously enough, seems only to obtain in a few estates in London, where the freeholders are peers and men of high rank.

While dealing with this portion of my subject, I cannot refrain from comparing the position of English leaseholders with that of Irish tenants.

Recent legislation has certainly created an anomaly. Now the Irishman can lay out almost any sum he chooses in improvements and building, and, if required to go, gets fully compensated for his outlay. His landlord may consider the outlay stupid and unprofitable, but he cannot prevent the outlay, although he is bound to repay it. He must at some time or other find the money to recoup the tenant a great portion of the outlay. Now turn to the position of the English leaseholder. He may build and improve as much as he likes, but not one penny can he require his landlord to repay him; worse still, he is liable for dilapidations on the very improvements he makes. Pardon this digression. I have made it to show forcibly the exact position of the English leaseholder. To further exemplify it I need only mention that if modern sanitary science, through its official medical officers, considers the premises unfit for habitation, and that they cannot be structurally altered to render them fit, the lessee has the pleasure of pulling them down, or, if not, the authorities will do it for him, the result being he is deprived of his income while the freeholder scarcely suffers. More frequently he does not suffer at all, for this reason,—he acquires at a much earlier date the reversion, and the value of the time thus gained compensates him for having the ground vacant. Surely if modern science considers that premises which every one considered fit for occupation years ago, are now unfit, some portion of the loss should fall on the freeholder, and he should find some portion of the money to render the premises fit and proper to meet the requirements of advanced scientific knowledge. Let us try to look at this point, as it bears much on dilapidations generally. A. and B. enter into a contract; both believe that the premises at worst are fit for habitation. Improved science says, some time afterwards, "We find these premises are unfit for habitation." Now, what in the name of common sense ought men to do? The granter of the lease should say, "I am sorry the article I gave you for a number of years for a certain sum has become valueless from causes over which we have no control, and about which we could have no idea; therefore, *pro rata*, will meet you in making the property what is required by advanced science." Such a course would appear right, only I regret I cannot mention an instance where it has been done. Bear in mind that in Ireland the outlay made by the tenant would have to be repaid him when he quitted the premises; dwell on this point, because I feel it is the key-note of dilapidations. Unquestionably dilapidations are more favourably construed as regards the tenant than they were formerly. The most recent decisions show that in repairing to *avoid* a money payment, it is not necessary to use new materials. Old stuff may be used, provided of course that it is of proper quality. Tindall, C. J., stated that the lessee was only bound to keep up the house as an old house, and not to give the freeholder the benefit of new work. More recent decisions appear to incline even more favourably to the lessee. In repairing it must be remembered, that if the tread of stairs be worn so that they require repairs, only nosings can be claimed; that if a door be required, the only claim that can be sustained is piecing. I think the foregoing will explain how at the present time we must take our schedule. Next, as to the time of doing the works to prevent a money claim for dilapidations: they must be performed *during* the continuance of the lease.

ARTIZAN SOLDIERS.

THE normal operative element which has hitherto been confined to the Royal Engineer Corps and the Pioneer force is about to undergo a large development, by a systematic organisation in respect to every regiment. The question of the employment of soldiers at trades is not novel in itself, but as by the new formation many issues are raised, and particularly as regards the future of the building operative, it may well claim a little serious attention.

Pioneers from the earliest have been connected with armies, and we need only instance the case of the Roman legions, their mission, and their work in Western Europe, and more especially in connexion with this island. It is now proposed, that in each regiment of the British army an efficient pioneer body shall be formed, comprising men who to their ordinary duties as pioneers will be available for imparting instruction to soldiers desirous of learning a trade, and practising the same for military and governmental purposes.

According to the "Queen's Regulations and Orders for the Army," the distribution of this operative force will be as follows :—One sergeant, a carpenter by trade, if possible; three carpenters, two bricklayers, one plasterer and slater, or a man each able to slate or plaster; one smith, capable of shoeing horses; one mason, who will also require to be a stone-cutter; one painter and glazier, two plumbers and gasfitters; the total consisting of one sergeant and ten pioneers. Power will be invested in commanding officers to appoint subordinate men to be of the Pioneer Corps, without asking permission of a higher authority. Transfers from other regiments will be allowable when any regiment is unable to furnish the specified quota, or by enlistments of new men of the required trades. Should men be taken on at stations where their qualifications cannot be properly tested, they may still be appointed as pioneers, but the first opportunity that occurs for testing them is to be availed of. Although pioneers are, as a rule, intended to be stationed at the head-quarters of every regiment, yet, at the discretion of the commanding officer, they may be otherwise disposed. A small proportion of carpenters, smiths, and plumbers whom the Royal Engineer Department may have classified as ordinary pioneers may be received at Woolwich for instruction. Each non-commissioned officer having the control or selected for taking charge of a body of pioneers, must himself be an artizan of some kind, as he will otherwise be required to correspond and keep accounts appertaining. All competent men selected for the duty of pioneer sergeants will, on the application being made to the Adjutant-General, be sent for entry to the School of Military Engineering, and, after a state of probation, may have their appointment for their new duties confirmed after six months' trial. It is regulated that, after appointment, no pioneer sergeant can hold a second situation.

In the "Equipment Regulations," the tools needed for the use of pioneers are stated, and the materials for barrack damages and repairs will be furnished through the Royal Engineer Department. Next comes an interesting feature; the pioneers may be either employed on work for the Royal Engineers, or the Contract Department,—1st, by contract or agreement made with the pioneer sergeant; 2nd, by piecework; 3rd, by day-work or the hour. Men belonging to the building branches, such as carpenters, joiners, masons, bricklayers, blacksmiths, gasfitters, plumbers, glaziers, painters, and others, are peculiar to the Royal Engineers, and these will be classified and tested by the Royal Engineer Department; but the Contract Department will see to the qualification of the armourers, smiths, wheelers, carriage-smiths, saddlers, coopers, shoeing-smiths, saddle-tree makers, collar-makers, &c. In the employment of these soldier operatives, priority is to be given to all pressing work needed for public service, and for the performance of this work a preference will be given to skilled and competent men. The work of the regiment may be performed as circumstances permit, and the officers are allowed to employ the men on private jobs for themselves, and others may so employ them, if approved of by the commanding-officers.

A danger seems to lie here, for the word "others" may be made to include work within or without the barracks, and officers' private jobs may be extended to their lodgings, for numbers of them reside outside the barracks with their families. A fund is to be raised to defray the cost of repairing or replacing tools, and this fund is to be created by a contribution not exceeding 5 per cent. to be deducted from payments made for work executed. It is intended to make the system self-supporting without meddling with the ordinary regimental pay of the soldier-craftsmen and pioneers. It may be asked what will be the effect on the mechanical world outside the army by these new regulations in the British army. We believe the system contains the germs of much good, but it is not entirely free of future danger, and will be all the better for a little discussion.

EWELME AND DORCHESTER.

SIR,—The tourist season is now coming on, and to your young architectural readers a brief excursion to Ewelme, near Dorchester, in Oxon, may prove as interesting and instructive as it was to myself.

Being at Wallingford, and having read of the Ewelme Rectory scandal case in the House of Commons, in my own mind I judged that the living, being a pretty good one, would probably contain a church worth seeing. Half a mile from Wallingford, I took the fields by the west side of Cromarsh Giffard Church, a small ancient Norman one; a beacon elm-tree guides the stranger for three miles without a house near the way. A few yards from the tree is a steep descent, at the bottom of which stands the village; and the first sensation at the view of it is that of having walked into another age rather than one at the latter part of the nineteenth century, the several clusters of farmsteads, with their outbuildings forming a scene of rural beauty seldom met with. Among the blocks of buildings can be seen an Elizabethan one, near the church, for which I made. I found it to be the National School. It is built of red brick, with angular buttresses and wholesome-looking chimney-shafts, that fairly put to shame our miserable sham bits of chimneys in this much-vaunted civilised age. The doors contain the old oak tracery in the head. Ascending the ground, I came upon the schoolmaster's house, a substantial-looking block, with a battlemented entrance at each side of the yard enclosing it. Next I came upon a good red brick gateway, with a pointed arch, enclosing a huge ornamental cusp, cut in brick. Near this stands the quadrangular block of the almshouses, and, entering by the north side, I found the houses surrounded by a courtyard, with a covered way to each side, the plan of the block showing the greatest concern for the comfort of the old inmates. The windows and doors, by opening upon the courtyard, effectually screen them from the summer's heat and winter's cold. In the centre of each

passage-way is an opening, enriched with an unglazed three-light traceried dormer window and richly traceried barge-board, the openings being to facilitate crossing from one side to the other. I was told the pensioners had 9s. a week, besides various gifts and what they can earn by working, showing that we are decidedly behind-hand with our deserving and infirm poor. We bundle them into costly workhouses, and make their latter days a comparative misery to what was the case four centuries ago. Ascending a flight of steps, a covered way to the west end of the church is arrived at, the doorway being rich. The church is of late Perpendicular date. Internally it is handsome, and plain externally, with a vestry on the north side of the chancel. The whole block, consisting of the church, almshouses, and schools, were evidently planned and built at the end of the fifteenth century, and, considering the state of preservation they are in, there are few places that can boast of such an interesting block to the architect or casual visitor.

Should the visitor decide to go on towards Dorchester, at Berwick Salome is a poor old church, with a low timbered tower, tarred over. I was surprised to learn it contained a peal of six bells. On going up to them, I found them to be in a space of 10 ft. by 10 ft. The font is a good and small Norman one, with interlaced circles in two series round it, with leaves between, a peculiarity observable in the circles being that a connecting band is only round that half of the font facing the east, the west half being without it. At Warborough is a lead font, of early Perpendicular date. The tower has outside the figures 1666 upon it, in flint stones, and, considering the date, it is a creditable specimen, having buttresses and pinnacles, looking well at a distance. Next comes Dorchester Church, which is too well known to need any comment from me. The font is of lead, of early Decorated date, and enriched with sculpture. In a glazed case at the west end is collected a number of stones, exquisitely carved and highly enriched with tracery: they evidently formed the groining to an altar-piece or monument, some of them retaining their original colours and gilding. They were taken out of a blocked-up doorway in the north wall of the nave, which is now blocked up again. The building is undergoing restoration at the east end of the south aisle. I trust I have not intruded too much upon your valuable space, but that it may prove an incentive to our young architectural friends in their leisure time to roam about and see the treasures of their native land, which are in such profusion as no other country can produce.

J. B. WATTS.

PROVERBS FOR GENERAL CIRCULATION.

LOOK before you leap, and behind after you have leapt.

Of two equally matched for the race one can only win by an accident.

A *screw* may take the lead of a lamed thoroughbred.

If the theory of progressive development be true, all men are cannibals.

If you wish well to mankind, check your national predilections and prejudices.

The object of schools and colleges is to render mediocrity tolerable,—they cannot make great men.

If there is a past in which men have done ill, let them have hope; for there is a future in which they may do well.

A body that has received a very fine polish may be easily hurt.

Men are intellectually and physically unequal. Is it just to judge them by one standard?

Shall the ear which has a hundredfold reproach that which has only seventy?

Be not envious of ill-gotten success.

The wily fowler does not spread his net in sight of the birds.

It is well for men that there are *laughers*, or they would be more ridiculous than they are.

If the *laughers* are to be effective they must neither laugh too much nor too often.

Prosperity is the destruction of a fool.

No one could gain an advantage if all men were equally matched and equally circumstanced. He who wins always wins by some balance in his favour.

Who shall estimate the taxes of time and money which bad workmanship imposes upon the world?

The shifting signification of words is a perpetual stumbling-block to the understanding.

How poor are they who have neither patience nor hope.

People should recollect that they cannot swear to things themselves, but only to their impressions of them.

Success is oftener achieved by sap and mine than assault.

All evil springs from currents turned aside:
Obstruct the river, and the flood runs wide.

The mind is the east from which the day breaks.

Haze frequently lends importance to very insignificant objects.

We do not altogether like the clearness of reason, notwithstanding our professions to the contrary.

Many people go upon stilts all their lives.

Men without repose in their natures are uncomfortable companions.

There is too much talk, too much work, too little thought.

There are plenty of intellectual mines, but there are but few properly worked.

The time has come for taking coals to Newcastle.

Look to education; take care that it be of the right kind, and you need have no misgivings about the future.

The watchers are the first to note the dawn.

Education should make men from whom sculptors would desire to make statues.

A virtuous people will become a beautiful people.

Nothing in the universe is independent.

The world does not go far wrong when men sleep.

The effulgence of a great luminary dims the glory of lesser lights.

The heavens are not all light.

We should have more music if all men were in tune.

Why all this scurry: are men struggling to live, or to die?

If you had eyes all round you a pebble might trip you up.

No one need be offended when a pig grunts.

It is unfortunate to be a toad, though he have a jewel in his head.

A rat may be undermining your house, and you shall never hear him gnawing.

Your dove-cote may supply bills to unroof you.

Never show that you suspect, nor accuse till you have found that your suspicion was well founded.

Try what forgiveness will do before you resort to punishment.

The long-eared are timid, so be sure you make noise enough to frighten them.

Do not *gib* when you are whipped.

There are villains who spread their nets as systematically and treacherously as the spider.

Human foxes have holes: why not draw and hunt them?

Do not rear human ferrets: their pretended antipathy to rats only covers a taste for nicer game.

Serpents lie coiled and still, till they can dart and sting.

You shall know where fortune is dying by the swoop of the vultures.

Birds of prey see a long way.

The brave man who has conquered himself will not fail to gain other victories.

Many a man dies just as he comes in sight of the promised land.

In trying to overreach others, a man frequently overreaches himself.

We often injure ourselves by trying to stretch further than we are able.

When a man is in trouble, his dog does not desert him.

The masses, like sheep, make much bahing, look brave, and follow the bell-wether: nevertheless, the wolves select their prey.

We must not make too much of originality, for if all knowledge were erased, this would be re-acquired; and new men would rethink and re-elaborate the old thoughts.

All things beautiful and true are included in the Divine repertory: man's merit is, at best, to have trained his mind's eye to perceive them.

Institution of Surveyors.—At the next meeting, April 21st, a paper will be read by Mr. W. Menzies, entitled "Arterial Drainage Works, Water-Supply, and Sewage-Drainage Works, executed at Windsor, between the years 1867 and 1873.

THE TAY BRIDGE.

A VERY fully illustrated account of the Tay Bridge, North British Railway, the method of building the piers and sinking them, the caissons and so on, will be found in the *Engineer* of April 4th.

The total length of the bridge from shore to shore is 10,320 ft. Commencing from the south, or Fife side, there will be three spans of 60 ft., two of 80 ft., twenty-two of 120 ft., fourteen of 200 ft., sixteen of 120 ft., twenty-five of 66 ft., one of 160 ft., and six of 27 ft. The first three spans (60 ft.), south side, are on a descending gradient of 1 in 100, the two 80 ft. spans are level; the bridge then rises with a gradient of 1 in 353 to the centre of the 200 ft. spans. It again descends with a gradient of 1 in 73·56 to the north shore, passing at a height of about 18 ft. over Magdalen Point and the esplanade now being constructed.

The bridge thus comprises eighty-nine spans, and at the commencement on the south side the rails are 78 ft. above high water, running over the tops of the girders as far as 200 ft. spans which cross the navigable channel of the river. Over these fourteen spans the rails run on the bottom of the girders, giving a clear headway of 88 ft. above high water. On reaching the 120 ft. spans on the north side, the rails are again on the top of the girders, which is continued, with the exception of the 160 ft. bowstring span, to the north shore. From the south side the first five spans are on a cure of twenty chains radius. The bridge then runs straight across the river as far as the end of the sixteen 120 ft. spans on the north side; thence the whole of the 66 ft. spans, 160 ft. bowstring, and the 27 ft. spans are on a curve also of 20 chains radius, forming nearly a quadrant of a circle, the length being about 2,000 ft. This long curve is necessary to bring the bridge,—which runs nearly due north,—at right angles across the river into the town, alongside the Caledonian Railway.

The greater part of the piers are built of brick, varying in diameter from 6 ft. to 15 ft. Fig. 1 shows the elevation and section of a pier 9 ft. 6 in. diameter at the water-line, supporting the 120 ft. spans. Fig. 2 shows the elevation and section of a pier 13 ft. 6 in. diameter at the water-line, carrying the 200 ft. spans.

The method of building the piers and sinking them to the foundation is carried out in a novel manner, and specially adapted to rivers having strong currents, and with little soil overlying the rocky bed,—which here in one case did not exceed 4 ft.,—prohibiting the use of timber staging, as heretofore used for such structures.

The piers are first built up to the height of 15 ft. on the foreshore on a temporary basis of concrete, the girders carried by the pontoons are floated over the pier, and with the falling tide are left hanging to the pier by brackets, the pontoons being floated away and moored in the harbour. The pier is then built up to such a height that when resting on the bottom in its permanent position the top will be above low water. The girders, on which are resting the hydraulic rams for lowering the pier, are then connected by the wrought-iron lowering links with the base of the pier. The pontoons are floated underneath the girders, and the whole pier floated from its temporary resting-place at high water and towed out to its permanent position. The heaviest piers floated out weighed 145 tons, and were lowered by six hydraulic rams.

The brickwork is built of Portland cement, in the proportion of one of cement to one of sand; and such is the strength of the brickwork, that after a few months those cylinders which capsized, after being floated on to the foreshore, could only be broken up by blasting.

Up to the present time, on the south side, twenty piers are in position, fourteen of which have been sunk to their permanent place. The first seven spans of superstructure are up to their proper level, and Nos. 9, 10, 11, and 12 spans are within a few feet of it. On the north side the piers and superstructure of the 27 ft. spans are completely finished and planked, and the bowstring span of 160 ft., with its piers, is nearly finished.

The bridge is being carried out from the designs of Mr. Thomas Bouch, M.I.C.E., of Edinburgh. The whole of the work was undertaken by Messrs. C. de Bergue & Co., of London, Manchester, and Cardiff, for the sum of 217,000*l.*; and the construction is being carried out under the superintendence of Mr. William Paterson, C.E., the contractors' engineers being Messrs. Grothe & Austin.

The contracts for the collecting line between Leuchars Junction and the south side of the bridge, together with railway running into Dundee and station, have been undertaken by Mr. Waddell, of Bathgate.

RECONSTRUCTION OF THE NORTH BRIDGE, EDINBURGH.

THE North Bridge at Edinburgh, which connects the new town with the old, resembles, so far as the traffic over it is concerned, London Bridge, which connects the City with the Surrey side of the Thames. There is an enormous traffic over both, and the carriage and foot ways across each have long been too narrow. The rebuilding or widening of the Edinburgh bridge has for some time been contemplated, and it now appears that the latter plan is to be adopted.

Messrs. D. & T. Stevenson, engineers, acting on instructions received from the municipal authorities, have just furnished plans, accompanied by a report, in which they recommend the widening of the bridge in preference to its being entirely re-built. According to these plans, it is proposed to make the carriage-way 32 ft. 6 in. wide, and the footways 11 ft., the entire width being thus 54 ft. But beyond this an additional width is proposed by the construction of projections on either side of the bridge supported by transverse iron beams. The total estimated cost of the proposed extensions, exclusive of the paving, is 13,500*l*. Messrs. Stevenson calculate that it will take something like twelve months to execute the proposed works, in consequence of there being a legal obligation in force preventing the bridge from being altogether closed, which it is alleged would have the effect of ruining the tradesmen who have places of business at each end of the bridge. They, therefore, propose to complete one side of the bridge before proceeding with the works on the other side.

Messrs. Stevenson report against the construction of an entirely new bridge, not only on account of the large outlay of 50,000*l*., which would be necessary, but also on the ground that the works would take a considerable length of time to execute, and that there would necessarily be a serious stoppage of traffic between the old town and the new town, as well as of the railway traffic under it.

It appears that the proposed works will cost between 2,000*l*. and 3,000*l*. more than they would have done a year ago, in consequence of the advance in the price of iron.

WESTMINSTER ABBEY.

THE reredos (of which we gave a view some time ago) is now completed. The reredos was, in its main features, set up in 1867. Three years later the vacant niches were filled, under the direction of the present dean, by Mr. Armstead, to whom the sculptures in the frieze are also due, by four statues, representing Moses, Peter, Paul, and David, the two Apostles being those to whom the Abbey is dedicated, and Moses representing the law-givers and statesmen, towards whose transept he looks, as David represents the poets, on the side of Poets' Corner. Since that time the decoration has been completed by the addition of framework and canopies of wainscot, gilt and inlaid with enamelled plaques of metal and plaques of filagree and jewel work. The general treatment of the space below the large picture is copied from the ancient retabulum discovered some twenty years ago, and now preserved in the south aisle of the Abbey. The *Times* says,—This retabulum was of the earlier part of the reign of Edward I., as is shown by the arms of Eleanor of Castille, and was probably painted by an Italian artist. It is recorded in Dugdale's "History of St. Paul," that there was there a like retabulum, made by one Richard Pickering, a citizen, in 1309, which is described as "a beautiful tablet, made and fitted to set upon the high altar, variously adorned with many precious stones and enamel work, as also with divers images of metal, which tablet stood betwixt two columns, with a frame of wood to cover it, richly set out with curious pictures." Its cost was 200 marks, which would, when translated into modern money, exceed the cost of the new screen in the Abbey. The vacant space underneath the picture has been filled with seven heads, representing the holy women of the Bible, which were designed by Messrs. Clayton & Bell, who employed Mr. Rust, of Lambeth, to execute them in mosaic, and who also undertook the ornamental glass-work and the gilding. The whole of the woodwork has been executed by Messrs. Farmer & Brindley, the enamelled and jewelled plaques by Mr. Skidmore, of Coventry. The three large porphyry slabs in front of the Communion-table were given by the present Lord Elgin.

THE WHITECHAPEL BATHS AND WASH-HOUSES.

WE regret to learn that the Whitechapel baths and wash-houses, the foundation-stone of which was laid by the late Prince Consort, and which for thirty years past have been of great service in one of the poorest and most crowded parts of London, are in danger of being sold to satisfy a claim upon them.

It appears from an appeal on their behalf which is now being made by the Rev. Canon Kingsley, that they have been closed since March, 1871, and are now in a dilapidated condition, and are likely to be sold this year in order to pay off a mortgage of 4,000*l*. Canon Kingsley, in making an appeal for subscription to raise the amount, and also to re-open the baths, points to the statement of Dr. Liddle, medical officer of health for the Whitechapel district, who says that since the closing of the baths thousands of poor women in the neighbourhood have been forced to wash and dry the house-clothes in one room, in which all the family both eat and sleep together, drinking in the seeds of disease from an atmosphere reeking with foul steam. Poor men's homes will never be fit for civilised beings to live in until such public baths as those at Whitechapel are within every poor man's reach. It appears that the committee which has been formed to raise the required sum, and so save the baths, consists of Mr. Cowper-Temple, the Rev. J. Cohen (rector of Whitechapel), the Rev. Canon Kingsley, and the Rev. W. Rogers (rector of Bishopsgate).

BUILDERS AND BILLS OF QUANTITIES.

AN architect, who had advertised for tenders, with this intimation,—"One guinea will be charged for the quantities, which will be returned on receipt of a bonâ fide tender," says, "Mr.—— (who applied to me for quantities, which were sent to him on the 6th of March last), returned them to me on the 14th of the same month, with a note, stating that he declined to tender, on account of his not being able to come to Manchester to see the plans, and requesting the guinea by return of post. Is he entitled to the one guinea, under the terms of the advertisement? If he is not, I should wish you to give it to some charity, or dispose of it in such a way you may think best.

What would my position have been had the other builders acted in the same way, by returning the quantities, more especially as there was a meeting of the Board convened to receive the tenders on the 18th, according to advertisement?"

We have returned the guinea to the writer, but have no hesitation in saying that we think the builder is not entitled to it.

THE NEW RESERVOIR AT GORLESTON, GREAT YARMOUTH.

A NEW reservoir has just been constructed by the Yarmouth Waterworks Company. The desirability of constructing a reservoir at Gorleston has long been felt, and to meet the general demand the Waterworks Company have built a covered reservoir, from designs by Mr. Hawksley, of London, C.E., and the work has been carried to completion under the superintendence of Mr. Ayris, C.E., the manager of the company, assisted by Mr. W. H. Bishop, clerk of the works.

The new reservoir is situated on an eminence on the Lowestoft road. The ground taken by the company was about five or six acres in extent. Entering the enclosure by a brick gateway, facing the east, a roadway, the sides of which will eventually be planted with trees and shrubs, leads to the reservoir, which, in its exterior aspect, differs but little from the reservoirs at Ormesby and Caister. The roof of the reservoir is approached by twenty-five steps, leading to an opening in the shape of a half-circle, and another staircase of twenty-five steps into the interior of the reservoir. The reservoir is constructed upon the principle of corridors, six in number, each corridor being of the span of 12 ft.; and to secure strength, the outer walls are made to form a series of bays, the roof of each bay terminating in a half dome; while there is a tank at each corner of the reservoir, with circular outer walls and domed roof, which form a tie to bind the walls of the building together. A thick bed of concrete has been laid under the entire floor, projecting beyond the foundations of the outer walls and puddle-bank, and upon the concrete is a bed of clay, covered with white bricks, forming the floor of the reservoir. A thick puddle clay bank is carried up outside the external walls from the concrete foundation to above the water-line of the reservoir. The latter is 115 ft. square inside, and the height from the floor to the roof is 16 ft. The reservoir is calculated to hold 800,000 gallons of water, and when full the depth will be 14 ft. 6 in. The reservoirs at Norwich are constructed upon an almost precisely similar principle, and hold about a million and a half gallons each. A well, 65 ft. deep, has been sunk, from which a portion of the water will be supplied, by means of a steam-engine, to the reservoir, and another pipe, connected with the Ormesby main will be laid across the river at Gorleston. The material used in the construction was as follows:—800 yards of concrete, 1,400 tons of clay, 80,000 bricks, 300 tons of lias lime from Leicester, 1,000 bags of cement, 10,000 cubic yards of material dug from the land adjoining to form the banks and to cover the roof, and 150 men were employed, with a large number of horses and carts. The total cost is estimated at from 7,000*l*. to 8,000*l*. The total cost of the other works of the company at Ormesby, Caister, &c., amounted to upwards of 80,000*l*.

ROYAL ITALIAN OPERA.

MR. FREDK. GYE does well in giving a certain number of singers unknown to London a chance of founding a reputation here, provided, of course, that he or his agents are first well satisfied as to their capabilities and probabilities; the subscription is too large to allow of experiments that are certain to be failures. With two of his lady adventurers, at any rate, on the present occasion, the public have reason to be satisfied,—Madame Paoli and Madlle. D'Angeri. The former lady especially, in the "Favorita," showed more than promise, and was generously received: the other characters were sustained admirably by Signor Nicolini, who is fast rising in estimation, and M. Faure, who can scarcely rise higher.

Both these artists distinguished themselves in a representation of Gounod's "Faust," which has been given. The scene and grouping of the Kermess are the most artistic things of their kind to be seen, and suggest a series of pictures by Teniers. Signor Cotogni (*Valentine*) should not be omitted when praises are being bestowed.

On Tuesday evening, Mdlle. Albani, who made an admirable *début* last season, re-appeared with signal success in "Lucia di Lammermoor." It was a fine performance, and has placed her high in the Town's estimation. The subscribers, who are numerous this year, we are glad to hear, can well afford to wait the coming of the great gun of the establishment, Madame Patti, whose appearance always serves to fill Covent Garden to overflowing.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

AT the meeting on April 9th, Mr. H. Syer-Cuming, V.P., in the chair, Mr. E. Roberts, hon. sec., referred to a communication he had received from Sir John Lubbock on the subject of his Bill for the Preservation of National Monuments, and mentioned that the council had that day agreed to petition Parliament in favour of the Bill, considering it a step in the right direction, although not going far enough in its scope, being limited to British, Roman, and Saxon remains only.

Mr. Thomas Morgan exhibited a handsome pair of steel scissors, of Spanish manufacture, the handles being inlaid with silver ornaments and tortoiseshell. On the blades was the following inscription:—

JUAN ROMERO ME FECIT EN LA
DL USSO DN'M'R'COM : GEN.

Mr. Isaacson Tucker, Rouge Croix, explained to the meeting that he had lately paid a visit to the "York Stairs," on which Mr. George R. Wright had read a paper at the last meeting, and found

that the arms on the gateway were those of Villiers, Duke of Buckingham. He quite concurred in the view taken by the Association, that this interesting memorial should be immediately raised from its present degraded condition, and made an entrance into the garden of the Embankment from Buckingham-street. A question arose as to whether the above work of Inigo Jones had been removed from its original position at the time of the destruction of York House, although the opinion of the meeting was in favour of keeping it in its present situation, under any circumstances. Mr. Wright doubted its having been removed, and referred to the drawing by Hollar, in the Pepysian Library, at Cambridge, in support of his view.

The Chairman exhibited a curious cast-iron chair of Sussex workmanship, and observed in reference to the antiquity of casting iron in Britain, which had been noticed by Mr. J. W. Grover, C.E., on a previous occasion, that it was undoubtedly practised in this country as early as the fifteenth century, and quoted several writers in support of that opinion. After other exhibitions,

The Chairman read a paper on the "Origin and Use of Hour Glasses," and the meeting adjourned to the 23rd inst., St. George's-day.

WARMING BY GAS.

SIR,—Mr. Barber's suggestions upon gas warming for domestic purposes open up a question deserving some attention. Makers of gas-warming apparatus will tell you that their schemes insure the perfect combustion of the gas, and that therefore no tube or chimney is required to carry off the products of combustion, or, as some have put it in other words, "there are no products of combustion to carry off," but their real objection to a flue is, that by carrying off the products of combustion in their necessarily heated state, the apparatus does not show so economical a result.

I am not a chemist addressing chemists, but we probably know sufficient of the matter to be aware that the combustion of gas does not annihilate it, but rather decomposes it, and allows the elementary gases of which it is formed to enter into new combinations with the gases of the atmosphere. Ordinary coal gas is (barring impurities) carburetted hydrogen, a combination of carbon and hydrogen; the act of combustion is the combination of the carbon with the oxygen of the air. Thus, one of the products must be carbonic acid, or carbonic oxide. I read from a book before me that "*Carbonic oxide is extremely poisonous, even worse than carbonic acid, is colourless, and possesses very little odour.*"

No method of warming by gas can be other than poisonous, unless provision is made for removing the products of combustion, and utilising the heat by means of radiation only; then we obtain for breathing heated atmospheric air instead of heated carbonic oxide, or heated carbonic acid. By the usual method of gas-warming, we not only rob our breathing air of its vital oxygen, but by mixing that oxygen with carbon, prepare a deadly poison.

The difference between the results of the ordinary gas jet for lighting purposes, and that of the Bunsen burner, in which air is mixed with the gas before combustion, is, I believe, that in the former case carbonic acid is evolved, and in the latter case carbonic oxide, the latter compound differing in its composition from the former in containing a larger quantity of oxygen, the more poisonous composition being the result of the more perfect combustion.

A. H.

HOT-AIR DOCTORS.

So long as the whole of the air admitted into a room has to be roasted on its way thither, so long may we be certain the atmosphere, from a health-invigorating point of view, will never be what it ought to be; but if the stove is merely looked upon as a source of caloric, to be cooled and aërated before it passes into the apartment, then something may be made of it. Dried and scorched air, which has necessarily lost all its ozone in its passage through or over the source of heat, cannot be healthy; but if it is generated at, say 200°, and is cooled by admixture with fresh air before it passes into the apartment to be heated, then it becomes another and very different thing. This is the rock upon which the day-dreams and waking schemes of a large majority of our hot-air doctors have been so far wrecked, and until they hark back to a more natural system, and one by which air can be warmed, aërated, moistened, and if necessary medicated, they will never heat our dwellings or public buildings in a really satisfactory manner. All the recent improvements have been directed almost exclusively to the economy of fuel, a very necessary point certainly; but there is something of more importance than the saving of pence, and that is, a warm and thoroughly healthy atmosphere.

Let those who are rushing in for patents for mere mechanical contrivances ask themselves a few questions as to the chemical and hygrometric nature of the atmosphere they are likely to generate, and they may possibly discover their scheme is not a perfect one. HORTULANUS.

THE TRADES MOVEMENT.

Brighton.—A very large meeting of operative carpenters and joiners employed in Brighton has been held,—Mr. George Duddell in the chair,—to receive a report relative to a memorial which had been presented to the builders of Brighton in August last. The following was the formal request of the memorial:—"That work shall commence at six o'clock a.m., and terminate at half-past five, and one o'clock on Saturdays, making a total of fifty-six hours and a half per week; allowing within the above-named hours half an hour for breakfast and one hour for dinner, the same to apply all the year round, and the wages to be 7d. per hour, making a total of 1*l.* 12s. 11½d. per week, and overtime to be paid 9d. an hour." These alterations were to come into operation on the 1st of April this year, and circulars had been sent to the masters, reminding them of this fact; but no reply had been received from the masters to either the memorial or the circular. After discussing the matter, the meeting unanimously passed a resolution to the effect that, having heard the manner in which the memorial had been treated, the executive committee be instructed to send a circular to the employers, asking them to meet a deputation of the men; that such deputation consist of not less than three nor more than seven; that the meeting take place not later than April 18th; that the employers give notice not later than April 12th of the number they propose upon the deputation, so that the men may appoint a like number; and that the meeting pledges itself to the decision of such conference. Two other resolutions were also unanimously adopted, as follows:—1. "That, in the event of the employers not meeting the deputation, the committee be empowed to withdraw one or more firms, as they may decide; and this meeting pledges itself to support them." 2. "That this meeting pledges itself to allow full pay to any delegate who may be discharged in consequence of this movement." It was announced that promises of support had been received from London, Manchester, Birmingham, and other large towns.

Weston.—The society men of the carpenters and joiners are now out on strike, demanding their present rate of wage, 23s., to be increased to 28s. 3d. per week. They state that an application to their masters to settle the matter amicably has been met with contempt, and they give as their reasons for making the demand that the prices of provisions are much higher than heretofore, and that the wages given in neighbouring towns are far in advance of those paid in Weston.

Inverness.—The operative slaters are at present out on strike. They have been paid at the rate of 5d. an hour, and they now ask for 6d., which the masters decline to grant.

Stonehaven.—The journeymen slaters have come out on strike. They have received for whole time 4½d. per hour, and they wish to have this sum advanced to 5½d. The men have left the town for Aberdeen.

Mr. Rupert Kettle's Award in the Iron Trade.—This award has been published in full in the columns of the *Staffordshire Advertiser*. After disposing of the question of the sliding scale in the negative for the present, the award thus settles the question of wages:—"I feel myself at full liberty, with the consent of both parties, to fix the rate of wages for six months—i.e., until the end of the ordinary Michaelmas quarter. And after the fullest attention I can give to the subject, and in the fervent hope that it may be beneficial to both parties, I fix, subject to its including all the claims I before mentioned, the rate of wages for puddlers shall be increased 9d. per ton from the 31st of March until the 4th of October; and that all other ironworkers shall be advanced for the same period at the rate of 7½ per cent. upon the present prices."

SCHOOL BOARDS.

London.—The works committee invited tenders for the erection of a school to provide accommodation for 1,058 children on the site in Jamaica-level, Southwark. The following were the respective amounts:—

Thompson	£7,925	0	0
Shepherd	7,800	0	0
Gammon & Sons	7,435	0	0
Newman & Mann	7,386	0	0
Tarrant	7,297	0	0

The committee recommended the acceptance of the lowest tender, that of Mr. J. H. Tarrant, of 33½, Weymouth-street, New Kent-road, S.E., amounting to 7,297*l.* The cost of the site was 2,500*l.* An application has been made to the School Board by Mr. Charles Reed, the vice-chairman, for their sanction to contracts being entered into by committee during the vacation, for carrying on the foundation works of the proposed new Board offices on the Thames Embankment, on the understanding that the actions of the committee would be submitted to the consideration of the Board on the 30th inst. The application was granted. As appears from our list of tenders on the 12th inst., tenders for concrete foundations for the Board offices have been called for and sent in.

Leicester.—The clerk read a letter from the Rev. Canon Burfield stating that the contract for the new schools of St. Mark's had been taken by Messrs. Osborne, Brothers; that there would be accommodation for 485 boys and girls in equal proportions; and that they would be finished by the end of the present year. The clerk also read the following report from the architects' committee:—The architects' committee have to report that fourteen tenders were sent in for the erection of the schools in Slater-street, a list whereof they submit with their report, and the committee recommend that the lowest tender,—that of Messrs. Osborne, Brothers,—be accepted by the Board, subject to the Education Department. The committee also present an elevation which has been prepared by Mr. Tait for the school in Elbow-lane, which they recommend to the Board for adoption. Tenders for the school in Slater-street:—

Firn	£6,380	0	0
Barnett	6,369	0	0
Sharp	6,345	0	0
Eagle	6,320	0	0
Hewitt & Sons	6,277	0	0
Flude	6,276	0	0
Major	6,206	15	0
Ratcliffe	6,220	0	0
Lewitt	6,130	0	0
Winkles	6,091	0	0
Sackree	6,000	0	0
Bland	5,805	0	0
Herbert	5,749	0	0
Osborne, Bros.	5,640	0	0

The first part of the report was adopted; and the latter part was held over, as Mr. Tait's plans were not then before the Board. The scheme for Wyggeston hospital schools has received the sanction of the Privy Council, and by it the trustees of the hospital are to pay over to the governors of the schools 15,000*l.*, 6,000*l.* of which are to be applied to building boys' and 4,000*l.* for building girls' schools. The boys' school is to accommodate 300, and the girls' school about 200, with a capacity for extension in each case. Adjoining each school is to be a residence for the head-master and mistress. The scheme is viewed with great dissatisfaction in the town.

HOUSES FOR THE WAGE CLASS.

SIR,—Although a carpenter, I do not say there is nothing like leather. Wood may be best in Norway, Sweden, Canada, and where a surplus of slabs from deals, forest thinnings, &c., exist; but in this part of England I am doubtful whether wooden buildings are profitable, taking labour, insurance, and repairs into consideration. Like cottages and other buildings the returns from which are small, I fancy we ought to look for a material which can be produced at a cost little above the labour getting and carriage.

In this neighbourhood (Fulham) and other suburban districts old brick rubbish, grouted with Portland cement, ground bricks, and hydraulic lime, would be better and cheaper. In other localities ironstone, sandstone, gravel, or chalk might be at hand; if none of these are handy, and clay should be close to hand, pier walls would in a short time be hard enough to bear any ordinary wear and tear. Either of those materials would be incombustible, and is not liable to rapid decay. They might also be made ornamental if required; even ivy or other climber might set them off.

Houses for the wage classes are also worthy of consideration. You note some buildings in Germany and elsewhere of concrete. Would it not be desirable in this and other suburban districts to build a few hundred semi-detached houses, having gardens and room to erect workshop or plant-house, that the occupier may amuse himself after leaving his daily work instead of spending his time in a tap-room, and teach his children to labour or cultivate a few flowers? I think that class of house would tend to raise the moral standard, and keep it up in the new-comers from the country districts, rather than the plan now followed by building eight or ten roomed houses to be let in tenements of one, two, or three rooms each, however large the family may be who occupy them. Would it not be preferable for the wage-receiver to pay a trifle more ground-rent, saving by the privacy afforded?

Selecting this locality for the experiment, the following advantages occur:—

We are close to the District, Metropolitan, Western Extension, and North-Western lines, giving access to most parts of the metropolis, Surrey, and other western counties; we are near the educational centre of South Kensington, the cheap musical experiments at the Royal Albert Hall, and to Hyde and Battersea Parks. I think, however, the directors of the District and Metropolitan lines, if they profess to run a workmen's train, ought to be obliged to adhere to the old times, 5.15 and 5.30 a.m., and not be allowed to defer the train until 6.15, thereby causing a loss of some 4s. per week to many working men. The companies receive the profit arising from friends of the artizans travelling, and ought to bear the loss, if there is one, on one or two early trains. There is also a possibility of helping the educational movement.

Were a co-operative company formed for the erection of houses similar to those I refer to, the unoccupied ground might be used by the growing boys on the half-time system. The parent would thus benefit, and the child would receive an industrial training.

Surely among your wealthy readers there is public spirit enough to try and benefit their fellow men, even if they do not get quite as large a percentage on their investment. There are several plots of ground near here for sale, if any warm-hearted person will try that field of labour.

JOSEPH CHERTIEN.

THE WAY TO THE VIENNA EXHIBITION?

SIR,—The coming Exhibition at Vienna will most probably be an attraction sufficiently strong to induce great numbers of the art-workmen of this country to pay a visit to the Austrian capital. I have no doubt some one of your numerous readers, who, from experience, may be able to afford information, will kindly tell us the best way to take the trip, so that the journey may be performed in the least possible time, and afford an opportunity of viewing the greatest number of places by the way commanding architectural interest.

Personally, being tolerably well acquainted with Italy and France, I should like to travel *viâ* Germany, in which case I should be glad to know where to make my stopping places. I am sure that many hundreds of my fellow art lovers and workers will join with me in thanking, in anticipation, the kind correspondent who may enlighten us upon this subject.

H. HEMS, Carver.

A SMOKY CHIMNEY.

SIR,—Can any of your correspondents suggest a remedy for an old country fireplace which smokes continually with the violent south-west winds? A metal hood has been put on the top of the flue, and closed at one end, towards the south-west, but it still smokes. The flue-opening is large at the lower part, and occasions a strong current of air, which cannot well be reduced. Were a grating erected over the fireplace into the flue, would it effect a remedy by a current of air passing into the flue?

A SUBSCRIBER.

STORING RAIN-WATER.

SIR,—I should feel greatly obliged if one of your correspondents would give me information on the best means of saving the rain-water from my house for supplying the kitchen boiler, baths, and house generally with pure, soft water. As I am about to increase the size of my house, it would be a good opportunity for carrying out some arrangement of the kind; but those whom I have consulted on the subject have not any very satisfactory views for doing so, and my own experiments with two water-butts charged with shingle and charcoal have all failed to keep the water pure. There must be some way of economising and storing rain-water for household purposes, taken from the roof, and I should be glad of any information your correspondents may be willing to give.

G. M.

TRADE SOCIETIES AND THE LAW.

SIR,—The late case at Newcastle, in which the Engineers' Society refused to pay a member the benefit for which he had for upwards of twenty years subscribed, will, it is to be hoped, turn the attention of the members of all trade societies to the position in which they are placed by the law imposed on them by their leaders. The present law regulating the position of these societies received its main features from the Bill brought in by Mr. Thomas Hughes in 1869; which Bill was prepared by Mr. Frederick Harrison, and agreed to by a conference of trade delegates as a desirable Act. No opposition among the unionists appears to have been given to this proposed Act, until it was placed before a public meeting at Exeter Hall, under the presidency of Mr. Samuel Morley. From the moving of the following by a very small party in the meeting, it appeared that Mr. Harrison's Bill took away all legal claim of the members on these societies. The resolution proposed in reference thereto was,—

"That this meeting is of opinion any legislation on trade-unions, to be just, should make such unions legally responsible for any assurances made to its members."

The meeting listened very impatiently to the mover of this, as may be seen from the *Times* report of the proceedings. However, with all their effort, this Bill did not become law, and the injustice proposed to be legalised was postponed until 1871, when Mr. Bruce introduced the Government measure, which contained the same provision. After what is now the "Criminal Law Amendment Act" had been separated from this Bill, the unionists gave their general support to it. But at the trades conference, called to take the Bill into consideration, which was held at the Sussex Hotel, Bouverie-street, E.C., March 1, 1871, the delegate from the Wokingham carpenters called attention to the injustice likely to be perpetrated on the members by the proposed measure, and he proposed the following resolution:—"That this meeting is of opinion any legislation on trade-unions, to be just, should make such unions legally responsible for any assurance made to their members; therefore this meeting must withhold its support to the present Bill, until such time as that portion of clause 5 is erased which would relieve the societies of their legal responsibility in this matter." This met with no support at all. Not another single delegate could be found supporting the interests of the members. They were all desirous for protection as far as the fraudulent acts of their treasurers were concerned; but that the individual member should be protected against the society, should it at any time wish to act in a like manner, was not thought desirable. This was indeed asking protection for the strong, and for assistance to injure the weak.

The Wokingham men still pursued their opposition to the Bill, and memorialised the Home Secretary on the matter. From their memorial I take the following sentence, thinking they may even now assist in making clear the position of trade-unionists under the law. The memorial ran thus:—

"To the Home Secretary, &c.—We cannot imagine the reasons that could have induced the Government to attempt to place members of such societies outside the pale of the law, more especially when they would in the same measure provide for the societies being recognised, and give them legal protection for their funds. We consider it nothing but justice that such associations should be protected against the fraudulent; but, surely, it will be the reverse of justice if a like protection is denied the members as against the society, and should the 5th clause remain unamended, no protection or redress would remain to members in case any society refused to pay any benefit to which a member may be justly entitled."

"We can agree with that portion of the clause which declares the society shall not be able to directly enforce any agreement for the payment by any person of any subscription or penalty to a trade-union, inasmuch as the society is fully able to, and does, protect itself in this matter, by (in our own society) compelling the members to subscribe twelve months before becoming eligible to benefit; and, after which, should a member neglect to pay his subscription within a given time, he forfeits every claim on the society, with all moneys he may have previously paid."

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"We would further urge that it is not for the public good that any association should be incorporated without being compelled to fulfil its agreements."

* * * * * * *

This had no effect on the Government. Sir Charles Dilke, the Hon. Auberon Herbert, and other members of Parliament, were asked to support the prayer of the Wokingham men. These members, however, "would not take the matter up; the leaders of the working men must be seen." The Bill became law, and, I believe, the only petition against it was presented to the House of Lords by Earl Russell. One clause of this petition said,—

"Your petitioners believe it is not desirable the protection given to members of societies registered under the Friendly Societies Act should be withdrawn, experience having shown such protection to have been needful, and your petitioners are therefore unable to see why the members of trade-unions should be denied the same protection."

Surely the members of these societies will now see to what a pass their leaders have brought them. Each member is entirely at the mercy of the executive of his particular society. His only appeal is to the members, and he must, indeed, have a strong case if he is able successfully to cope with the executive.

But have not the public an interest at stake as well as the members? That there is good in these associations none will hardly deny, but that good never can be injured by coming within the law, or, if so, it is the law that should be altered. Trade-unions are not infallible. Rattening is not altogether a thing of the past. Remembering this, is it wise such a power should be placed in the hands of these societies that they may have a legal right to withhold a benefit justly due to a member, for the reason perhaps that he refuses to act the part of a coward and traitor to the freedom of his fellow-man? Is it wise to refuse protection to those members (and I believe they are the majority) who wish all their actions to be fair and above-board? Only two short years after the passing of the present Act we learn of the gross injustice at Newcastle by the most respected of the large trade societies. There is no doubt the law is unjust. May this first injustice under it be the last; let it not be a fact that the law of England protects the funds of societies obtaining money under false pretences, for such is the case when promises of benefits are held out to men in return for certain subscriptions, and when such subscriptions have been paid and distress comes, the society refuses to meet its engagements.

The members in self-defence should demand an amendment of the law, and the public should not tolerate a law under which the Amalgamated Society of Engineers has refused its superannuation benefit to a member of twenty-one years' standing. A member, let it be remembered, who has paid upwards of 50*l.* to the society, is now cast off, and is not even given a reason when he seeks redress in an English court.

M. H. J.

Worcester Park.

STEAM TO PUT OUT FIRE.

SIR,—I believe steam would be the quickest, easiest, safest, and most effectual agent to extinguish fires in buildings,—steam from fire-engines or other steam boilers near.

Break or disconnect the iron gas-pipe next to the stop-cock (outside all buildings); then clap on the steam. The force would instantly burst the thin leaden pipes in the interior and fill the house. No fire will stand steam; furthermore buildings and goods would not be flooded. This could be applied to ships' holds to quench spontaneous fires amongst cargoes,—steam from cook-house, boilers, or otherwise.

R. T.

SHIPS' BOATS.

SIR,—Would it be possible to launch boats more expeditiously from ships by having a *launcher* on board, such as a long narrow plate of iron, with a groove in the centre, for the boats to slide down upon into the sea, with a strong grapple at one end to be affixed to the part of the ship required, when the launcher was heaved overboard; and this small boat-railroad inclosed with iron hoops, that the boats might slide *straight* down (like the skeleton of a half-barrel)? Perhaps mechanical minds may grasp my meaning, and know whether the suggestion is quite impracticable.

H.

POROUS TILE ROOFS.

SIR,—Would you or some of your correspondents kindly inform me what is the best remedy for tile roofs that are porous? I find the upper part of my house is damp, and have traced the source of it to the tiles being porous. The lower part is perfectly dry, as the foundation is in a rock.

W. B.

SANITARY MATTERS.

Appointment of Sanitary Officers.—Dr. Griffiths, of Sheffield, has been appointed medical officer of health for the borough of Sheffield, at a salary of 600*l.* per annum. He is required to devote his whole time to the duties of his office. Mr. H. Allan has been appointed public analyst.

Sanitary Reform.—A Bill introduced by Sir Charles Adderley to amend the law relating to public health, proposes to extend the provisions of the Nuisances Removal Act to unwholesome milk; to add to the definition of the word "nuisance" houses without an adequate supply of wholesome water, any ditch, gutter, cesspool, dam, &c., in such a condition as to be a nuisance or injurious to health, and any animal kept in such a situation as to be similarly injurious. The Bill also proposes, among other things, to extend the right of complaint under the above-mentioned Act; to extend the power given to magistrates to close a house unfit for habitation to any part of a house or building; to extend the provisions of the Sanitary Act as to houses let in lodgings; to give power to rural sanitary authorities to make building by-laws, and to give power to the Local Government Board to make by-laws on the default of the sanitary authority. One of the clauses in the Bill proposes that every sanitary authority shall from time to time cause the water supplied for domestic or drinking purposes to be analysed.

CHURCH-BUILDING NEWS.

Grosmont (*Monmouthshire*).—The Church of St. Nicholas, Grosmont, on the banks of the Monnow, was restored in 1870, but again danger threatens it if means be not at once taken to restore the tower and spire; piers which support the tower, bells, and spires are crumbling away from the weight imposed upon them. About 600*l.* have already been subscribed to the fund, and the remainder of the 2,000*l.* required for the work will, it is hoped, easily be obtained. This church possesses one of those altar-stones marked with crosses in the centre and at the angles. The chancel is in perfect repair, but the rest of the building is in a lamentable state, and expense has already been incurred by shoring up the centre portion. 2,000*l.*, according to an estimate made by Mr. Seddon, the architect, would defray the cost of restoring the tower and spire with the transepts, reseating them, and erecting new frames for the bells, &c.; but should it be required to restore the nave and aisles, another 2,000*l.* will be wanted. A meeting on the subject was recently held by the ratepayers and tenant farmers, over which Archdeacon Crawley presided, and a resolution was unanimously passed to contribute a voluntary rate of not less than 5 per cent. upon the assessed value of the parish; but the parish is an agricultural one.

Lowestoft.—A meeting of parishioners has been held in the Kirkley Schoolroom, for the purpose of considering the propriety of enlarging and rebuilding Kirkley Church. The rector presided, and it was unanimously resolved "That as the parish of Kirkley, with a population of nearly 2,000 souls, has accommodation for only 220 persons within the walls of the parish church, the enlargement of the church is absolutely necessary." The plans were explained by Mr. Steward. It was proposed to do only a portion of the enlargement at one time so as not to prevent the services being held. When the entire plan is carried out the church will be rebuilt and seat 850 persons. The expense of the first portion of the enlargement was estimated at 500*l.* The sum in hand and

the promises amounted to 250*l*. A committee was appointed to carry into effect the wishes of the meeting to enlarge and restore the church.

West Clandon.—The parish church has long been in a dilapidated condition, and it is now proposed to restore it. A portion is considered unsafe, and this part it is intended to rebuild, and the exterior of the building will be put into substantial repair and made to exhibit an appearance more in accordance with its religious character. The interior also requires considerable renovation. It is estimated that 1,500*l*. will be required to restore the church entirely, and towards this sum Lady Augusta Leigh has promised 300*l*., the Viscountess Cranley 200*l*., Mrs. Onslow (East Clandon Park) 100*l*., and the Rev. J. C. Harkness (the rector) 100*l*. Mrs. Onslow has also promised a memorial window.

Woodley.—The Church of St. John the Evangelist, Woodley, has been consecrated. The edifice has been erected as a chapel of ease to Sonning, and it has been built and endowed by the late Mr. R. Palmer, of Holme Park, at a cost of 6,000*l*. The church is built in the late Early English style, and consists of a nave chancel, north aisle, organ-chamber, porch, vestry, and parvis. The exterior is faced with flint, with Bath stone dressings. The roof is tiled, and the turret is furnished with three bells. The front of the churchyard is enclosed with a flint and brick wall, the remaining sides being guarded with iron fencing. The chancel is separated from the nave with a triple arch, supported by Forest of Dean columns, with Bath stone capitals, bands, and bases. The screen wall separating the chancel from the nave is filled in at the base with gilded ironwork and gilded gates. The chancel is paved with Minton tiles, and also the nave and aisle. The organ-chamber is separated from the chancel by an oak park close. The reredos consists of carved panels, the two outer panels being filled with green marble, decorated with gold. The centre panel contains a carved representation of the Crucifixion; the left panel a representation of the Centurion and the Roman soldier; and the right panel, a carved representation of Joseph and Nicodemus proceeding to the Cross. The reredos is composed of Caen stone, with English alabaster arcading, supported on polished red granite columns, carved Italian alabaster capitals and bases. The super-altar is of Devonshire marble. The east window above the reredos consists of three lights of stained glass, supplied by Mr. Hardman, of Birmingham. In the centre light is a representation of the Ascension; in the left, the Lord's Supper; and in the right, St. John the Evangelist in a trance, beholding the Holy City coming down from God out of heaven (as recorded in the Book of Revelation). In the chancel are the sedilia and the credence-table. The tracery is filled in with the descending Doves, the Lamb, and the Angels. The seats in the nave and aisle are of deal, stained and varnished, and the choir-stalls in the chancel are of oak. The font is composed of Caen stone, supported on Forest of Dean columns and base. The columns are filled in with emblems of the Passion. The cover is made of Riga oak, and is the work of a young man resident in Sonning. The pulpit is approached by stone steps and an iron handrail. It is composed of Bath stone and English alabaster. The bookboard is of stone, supported on a column, at the base of which is a carved head of St. John the Evangelist. The roof of the church is open, the principal ribs and wind-braces being of oak. In the turret is machinery for ringing the bells. By means of a wheel, one person can ring the three bells. This was invented by Mr. Belcher, of Sonning. The church was designed by Mr. H. Woodyer, of Graffham, near Guildford. The clerk of the works was Mr. W. Cooper, of Croydon. Messrs. Wheeler, Brothers, of Reading, were the contractors for the masonry; Mr Green, of Sonning, for the brickwork and plastering; Mr. Brown, of Sonning, the staining and decorating; Mr. Cox, of Sonning, the carpentering work. The heating-apparatus has been supplied by Messrs. Remmington & Son, of Skipton, Yorkshire; and the ironwork by Messrs. Filmer & Mason, Guildford.

Bruntingthorpe.—The memorial-stone has been laid of a new church now in course of erection by Mr. H. F. Allen, builder, Leicester, from drawings, and under the superintendence, of Mr. W. Smith, architect, London. The old church, having been for years in a very dilapidated condition, has been pulled down, and the new church will have an additional aisle and chancel aisle, which will afford greater accommodation than the old one.

Halifax.—The erection of a much-needed church, to be named St. Augustine's, is to be commenced forthwith. A few weeks ago tenders were invited for the erection of the entire building, when it was found that they ranged from 11,000*l*. to 9,000*l*. Under these circumstances, therefore, it was decided to proceed with the erection of a portion only of the building. The church committee have resolved to begin the erection of the nave, aisles, and transepts, leaving the tower and spire and the chancel to a future date. The cost of this portion of the building will be over 5,000*l*., and about 4,000*l*. are already promised.

Worting, near Basingstoke.—During the past twelve months considerable improvements have been carried out at the Church of St. Thomas of Canterbury, in this parish. It became necessary to take some steps for effectually warming both chancel and vestry. The two stoves in the north aisle of the church being insufficient for the purpose, it was therefore decided that Messrs. Haden's process should be employed to remedy the want. Before winter set in, the two stoves had been replaced by an apparatus which, by means of small hot-air gratings in the vestry and chancel, and a larger one in the nave, keeps the whole church at one uniform temperature, which can be raised or lowered at pleasure. The construction of the necessary flues and the chamber for the reception of the furnace, involving the under-pinning of three walls, was carried out by Mr. Whistler, of Sherborne. The organ filled a recess on the north side of the chancel. Its position was unfortunate, and the construction of the new warming apparatus suggested a more convenient arrangement. Accordingly, the pit in which the organist used formerly to sit has been boarded over level with the chancel floor, and is occupied by the bellows, so that the choir can now be disposed north and south; and the organ has the advantage of being raised into a position far more favourable to its sound, and also better for the choir which it accompanies. Every available portion of the original organ has been worked into the new instrument, and some considerable additions have been made. The builders of the organ are Messrs. Wordsworth & Maskell, of Leeds. The design was by the Rev. F. H. Sutton, vicar of Theddingworth, who wrote a work upon "Gothic Organs."

SCHOOL-BUILDING NEWS.

Leighton Buzzard.—Tenders for the building of the New British Girls' School, in accordance with the plans and specifications of the architect, Mr. W. C. Reed, have been sent in as follows — viz., Messrs. Eyre & Son, Hockliffe, 1,037*l*. 12*s*. 6*d*.; Messrs. Wright, Bros., & Goodchild, Croydon, 953*l*. 5*s*.; Messrs. H. Edwards and C. Gibbons, Eggington and Leighton Buzzard, 935*l*.; Mr. Charles Room, Eaton Bray, 906*l*.; Mr. David Cook, Leighton Buzzard, 852*l*.; Mr. John Shelton, Newport Pagnell, 731*l*. 13*s*. Mr. Shelton's tender, being the lowest, was accepted, and a contract has been signed, and the works are to be completed by the 1st of August. The contract includes the needful approaches, offices, and drainage, and all joiners' work of pitch pine; but does not include the gas-fittings, desks, and forms, or furniture.

Walsall.—The foundation-stone of new schools in connexion with Centenary Wesleyan Chapel, Stafford-street, has been laid. The schools have been built near to the chapel, and will form an addition to the schools already existing, which have been found too small for the requirements of the district. The building will be 65 ft. by 30 ft., and will comprise two class-rooms 16 ft. by 14 ft., a small room, 10 ft. by 12 ft., and also a gallery. The building is 25 ft. high. There will be accommodation for 300 children. Messrs. Loxton Bros. are the architects, and Mr. James Adkins is the builder. The total cost will be 795*l*., including the cost of the fittings.

Bircle.—The corner-stone of a new day and Sunday school for the parish of Bircle has been laid by the incumbent of the parish church. The building will be in the Gothic style. Mr. S. H. Brocklehurst, of Manchester, is the architect; Mr. James Hill, of Bury, is the contractor for the masons' work; and Mr. S. Horrocks, joiner and builder, has the contract for the woodwork. The schoolroom will be 80 ft. by 21 ft., and there will be one classroom, 16 ft. 6 in. square. In addition to the school there will be a teacher's house, containing three rooms on the ground-floor, and five bedrooms. The site for the new building is situated a short distance from the church, and has been presented by the Earl of Derby. The school and teacher's house are estimated to cost 1,000*l*., the money being raised by public subscriptions, the amount already promised being about 500*l*. It is expected that the school will be ready for use about Whitsuntide next, and will afford accommodation, according to the Government standard, for about 230 scholars.

Driffield.—The foundation stone of the School Board new schools has been laid by the chairman of the Board in the presence of a large company. The site is immediately at the outskirts of the town. The school will accommodate 250 boys, 250 girls, and 200 infants, with master's residence. The buildings are in the Lombardic style, with brick facings relieved by arches and bands in red stock bricks, with slated roofs, and the floors are composed of upright blocks of larch set endwise. Mr. H. J. Paul, of Manchester, is the architect, and Messrs. Hewson Brothers, Driffield, the contractors for the work at the sum of 4,566*l*. 6*s*. 6*d*.

Everton (Liverpool).—The foundation-stone of a new mission-room and schools for the district of Christ Church, Everton, has been laid. The site of the new building is in Gordon-street, off Netherfield-road, about a quarter of a mile distant from the church. The new building will stand between Gordon-street and Conway-street, one side of it being in Leech Hall-street. It will consist of three stories. The basement will comprise an infant school, 65 ft. by 28 ft., with a class-room 30 ft. by 25 ft., and playing-sheds adjoining. The ground-floor will contain the girls' schoolroom and a large room for "mothers' meetings," and above this and extending the whole length of the building will be the boys' school and mission room, the dimensions of which will be about 81 ft. by 42 ft. In the mission-room accommodation will be provided for about 700 adults. The entrance to the girls' and infants' schools will be from Gordon-street, and that to the boys' schools from Leach Hall-street. Accommodation will be provided for about 300 boys, 200 girls, and 200 infants. The style of architecture will be Gothic, of an unpretentious character, and the principal gable will be surmounted by a bell-cote. The cost of the building will be a little over 2,000*l*., in addition to 1,100*l*. paid for the land. The architects are Messrs. T. D. Barry & Sons, and the builder is Mr. Hugh Dyer.

Luton.—The foundation-stone of new national schools for the parish of Christ Church has been laid. The site of the new buildings is in the Buxton-road, an open and healthy situation, and the schools, which are to accommodate 750 boys, girls, and infants, will, when completed, have a frontage of 164 ft. The architecture will be Gothic, and the total cost is estimated at something like 2,860*l*. The work will be carried out by local tradesmen, the architects being Messrs. J. R. & W. Brown, and the builders Messrs. Smart, Brothers.

Books Received.

Notes on Church Organs: their Position, and the Materials used in their Construction. By C. K. K. BISHOP.

THIS is a well-written little book, by a writer whose family have for three generations been honourably known in connexion with the art of organ-building; and gives, in a concise and readable form, information and advice as to the placing of organs in churches, the best materials for pipes, &c., which should be useful both to architects and to "organ committees." Nearly all that is said here on the subject of the position of organs, and some other hints besides, will be found in an article in a former number of the *Builder* (October 23, 1869), under nearly the same title; but the advice, as far as we can judge, will probably have to be repeated a good many times before the majority of the architects concerned in such matters can be persuaded to attend to it. In regard to one question, as to the placing of the organ in cathedrals, we quite agree with the author in thinking that the old central position on the choir-screen was a far better one than most modern church architects are willing to admit. "The partisans of the 'vista' theory have arrayed themselves strongly against this position; but what lover of architectural effect, who has seen the grandly-cased

organs at Lübeck and Bruges so placed, has failed to notice how the effect of distance is improved by the line of vision being thus partially broken?" That this position is by far the best for the musical effect of the instrument in a cathedral is incontestable; it may be questioned whether it is not also in reality the best for architectural effect. Mr. Bishop is scarcely as strong against the "organ-chamber" in churches as we could wish; he seems rather bent on making the best of it, and showing how it may be most satisfactorily constructed; but nothing can make such a position for an organ satisfactory, and the organ-builders ought to combine against it. We may mention a case which came under our knowledge a few weeks since, when a very eminent German builder was invited to build an organ for a church in Lancashire, the work of a leading English architect, and containing the usual absurd closet for the organ. The builder, with equal good sense and spirit, declined the commission altogether rather than put his instrument in such a situation; and eventually he carried his point, and was allowed to place it at the west end, where it is heard with proper effect. We join Mr. Bishop in calling attention to the advantages which would result if architects "would consult an organ-builder *before* instead of *after* commencing churches or other buildings intended for organs." For want of forethought, nine-tenths of modern church-organs are placed where they can neither be properly heard nor efficiently looked after.

The book is illustrated by lithographs of various designs and forms of organ-cases, drawn, and in most cases designed, by Mr. J. Tarver; they are sufficient for the purpose of illustration, but are unfortunately in that hasty, scratchy style which is so much in vogue at present, and which has only the merit of saving a great deal of trouble to the draughtsman. The designs are mostly appropriate and in good taste, without displaying any particular novelty or effect. Sir G. G. Scott's case for the organ at St. Mary's, Nottingham (Plate II.), is very picturesquely grouped, but is done great injustice to in the drawing.

The author would have shown better taste in omitting the reprint of laudatory articles from the papers on Messrs. Bishop & Starr's organs, which is tagged on at the end as a kind of advertisement. In other respects the book will be useful to those who are about to spend money on organs.

VARIORUM.

THE *Gardeners' Chronicle* sounds a note of warning to flower buyers, thus:—"Purchasers of cloves, carnations, picotees, or what is offered to them as such by hawkers, should look twice 'before they leap' at the proffered commodities, as the following incident will show. A couple of smart-looking young fellows, carrying large rush baskets, and having no lack of money in their pockets, came to a grower of market roots in West Middlesex, who, among other things, annually raises a few thousands of single cloves from seed. A wide-awake gardener selects for his seed-stock each year some of the broadest-leaved plants, and these invariably reproduce others of a like character in considerable proportions, such plants being most eagerly desired by the hawkers, and are in slang phrase called 'broad-leaved Jacks.' Our brace of smart young men purchase from 100 to 200 of these, at from 9d. to 1s. per dozen, and then, having ready some soft hay, bast, and deal labels, they proceed to carefully tie them up into pairs, furnishing each couple with a name, of which they have an abundance at the ends of their tongues, not a few having those aristocratic handles so dear to the dwellers in suburban villas; then, stowing their plants carefully in their baskets, and throwing them over their shoulders, off they set on their journey, to sell both their carnations and those who buy them."——A correspondent of *Iron* writes as follows, concerning English ironworkers in America:—"A few years ago, the 'president' (or, as we should say, 'chairman') of one of the largest iron-working companies in the United States came to England. The object of his mission was to get skilled workmen, especially for Bessemer works. This simple fact struck me as rather remarkable. In England it is common enough for workmen to go on tramp in search of employment, but it is quite out of the ordinary course of our experience for a very wealthy and prosperous company to send their chairman on a very expensive journey half-way round the world, in order to find workmen. The terms on which he engaged these men were also remarkable. He engaged them at once, at something like double their English wages, took them across the Atlantic with him at great expense, paying their high wages while they were waiting to start and during all their journey. They were engaged for a period of years. These remarkable facts awakened my curiosity, and led me to make further inquiries respecting the condition and career of other men in the iron trade who had left South Staffordshire, Shropshire, &c., for America, and under similar engagements. These inquiries brought out some very interesting and instructive facts. In all the cases that I could follow up I learned that the men,—puddlers, mill forgemen, &c.,—fulfilled their engagements faithfully, worked through the three or five years' term as arranged, but only a minority of them, in spite of very high wages, continued to be ironworkers, and these were by no means the most intelligent and provident. The majority of the best men saved sufficient to move farther west, buy some land, and become farmers, and thus the costly operation of sending to England for first-class workmen had to be repeated."——Readers of the *City Press* will be glad to hear, with reference to the antiquarian column in this well-conducted paper for so many years contributed by "Aleph" (the late Mr. William Harvey), that arrangements have been made for a succession of "City Scraps," by various writers of known ability. Mr. John Timbs furnishes well the first of these.——Hardwicke's *Science Gossip* maintains its interesting and useful character. Of popular science journals it is the best.——The April number of *The People's Magazine* is a very good one,—instructive as well as amusing.——*Old and New London* (Cassell) is going on very agreeably. No. 4 is chiefly occupied with The Temple, concerning which and its occupants there is much amusing gossip.

Miscellanea.

Ventilation.—To this all-important subject in the matter of hospitals Dr. Demarquay has devoted an interesting chapter in his latest work, "Les Ambulances de la Presse." He fixes the quantity of air to be changed at 80 cubic mètres per hour and per bed. Behind the latter, and on a level with the floor, the mouth of the evacuation-shaft should be placed, at the rate of one for every two beds. The question as to whether these shafts should be ascending or descending is decided in favour of the latter, because in that case they are made in the thickness of the lower walls, which, being stronger, are better able to bear a diminution of substance than the upper ones, which are thinner. All these evacuating conduits open into galleries, and these into a larger one, communicating with the main shaft, where a fire producing the draught is kept up. The average velocity of the latter should not be less than 180 centimètres per second, and 2 mètres at the upper orifice. The main shaft should be provided with a door opening into the courtyard, to enable the man intrusted with the care of the fire to feed it without having to expose himself to the pestilential effluvia of the galleries.

The Charity Organisation Society.—The fourth annual report of the council of this Society has been issued in a printed form, at the Central Office of the Society, in Buckingham-street, Adelphi. "It has long been evident," says the report, "that it is not want of money, nor want of relief, which produces so much distress and pauperism in London; and the Charity Organisation Society was formed not to raise a fresh relief fund, but to attack the causes of want and pauperism in a systematic manner. To establish inquiry offices, which shall at the same time be bases of charitable operations, in each of the poor-law divisions of London, to give them necessary support and guidance, and to carry on those various functions which it is found expedient for the council to discharge as the representative of the Society, has required considerable outlay of labour and money. A considerable part of their income has again been derived from the guarantee fund which a small number of noblemen and gentlemen contributed in 1870 to assist them during the three following years. This fund is now nearly exhausted, and they will be obliged in future to rely on the public for sufficient means to carry on their work."

The Castellani Art Collections.—The question must now be decided whether the nation shall make these art works its own, together with an additional collection, some of them of higher rank. Pending the decision, the bulk of the whole is for the moment placed together in the British Museum. Among the highest examples is the bronze head of, probably, Aphrodite, and understood to have been found in Thessaly, which has only just been brought to England. This is of heroic size, with the back and crown of the head partly battered in and wrenched away, and with the eye-sockets empty; but for the rest, presenting a front view quite unimpaired, with nose and mouth perfect and uninjured. Between the two sides of the face there is a curious deviation from symmetry of which, as yet, it seems impossible to say whether it will have been due to the wrench that has once torn the statue, or to one of those subtle audacities of artistic calculation by which the Greek instinct was wont to adjust the proportions of a work for a true effect from its particular point of view. There are other bronzes in the collection, which have lain longer than this beneath the eye of experts and students. Next come the marbles, and foremost among them a Sicilian Heré. This colossal head was found at Girgenti, and is remarkably complete. There is a series of Roman imperial busts, of which the most important are a young Augustus, in singular preservation (perhaps the best extant), and a Tiberius in old age; besides a Roman sarcophagus, which is not yet in this country. Another sarcophagus, belonging to the class of terra-cottas, is one of the chief items in the whole collection, and belongs to its newer portion. Its possession would go far to make up for the loss of the Cesnola discoveries. Among the minor terra-cottas are a great many figures of the ordinary ornamental kind found in tombs, a few lamp-moulds and miscellaneous curiosities, and one unique set of figures of Roman actors, glutton, parasite, and the rest. The vases are numerous, and especially strong in the class of rhytons, or cups moulded in the shape of animals or heads of animals. There remain a variety of carved ivories, and of carved ambers from Sicily.

Reproduction of Monuments.—The list of works purchased by the trustees of the National Portrait Gallery include a cast in plaster from the upper part of the monument in Westminster Abbey. Purchased March 15th, 1872,—price, 1*l.* 11*s.* 6*d.* The above-named effigies of the earlier sovereigns, as they are placed in Westminster Abbey, being all in a recumbent position, and considerably elevated beyond the reach of the spectator, are almost useless for special purposes of portraiture. The trustees, therefore, by permission of the dean, availed themselves of a favourable opportunity, when the statues had been carefully cleaned and freed, for the first time, after the lapse of centuries, from corrosion and the accumulation of dust, to have plaster casts taken from them, with great care, by D. Brucciani. It is contemplated by the trustees that the plaster reproductions specified in the foregoing list shall be converted into bronze by Messrs. Elkington's electrotyping process, already applied with complete success to the monumental effigies of King Henry VII. and his Queen, and of Mary Queen of Scots, described in the previous report of the trustees, under the head of Donations No. 85.

Co-operative Congress at Newcastle.—The fifth annual congress of the Co-operative Societies of the United Kingdom was opened at Newcastle-upon-Tyne on Saturday, under the presidency of Mr. Joseph Cowen, jun., who delivered an address of some length to a large audience of delegates and others. A large public meeting was held in the evening under the presidency of Mr. Joseph Cowen. Mr. T. Hughes, M.P., moved, and Mr. Lloyd Jones seconded a resolution "That this meeting recognises in co-operation the most effectual means of permanently raising the condition of the people"; and Mr. Morrison, M.P., moved, and Mr. G. J. Holyoake seconded the motion, "That it is the essence of co-operation to recognise the right of labour to a substantial share in the profits which it creates." The resolutions were unanimously agreed to.

Middlesbrough Exchange.—We hear that a tower is about to be added to the Middlesbrough Exchange, to make the design of the building complete. Other arrangements, to make it more convenient, are also likely to be carried out.

The Opening of the Spencer Docks in Dublin.—On Monday the Spencer Docks were opened in Dublin by the Lord-Lieutenant. These docks have been carried out by and for the Great Midland Railway Company, for the accommodation of their outward and inland traffic in connexion with England and Ireland, and are capable of accommodating nearly 100 vessels of large tonnage. The upper dock has a spacious quay-wall on its western side, built with cut limestone, with a strong concrete backing, running the entire length, over 1,700 ft., 100 ft. wide on top, with a double line of rails. This wharf is for the convenience of the general public. On the opposite, or eastern side, the quay-wall was constructed by driving long piles, 6 ft. 6 in. below the bed of the dock, and reaching to the top of the wharf. This quay-wall is also provided with a double line of rails, similar to the other side, and is intended solely for the traffic of the Midland Great Western Railway Company. A swivel bridge connects the two docks.

Curious Relic.—A Findon correspondent of the *Sussex Express*,—Col. Margesson,—sends a sketch of a small cavity formed by brickwork, found by workmen when excavating under the stone floor of the old kitchen at Findon-place. In section it is spade or shovel shaped, point downwards, the upper part below the level of but in the same plane as the floor. The lid was broken by the pickaxe of the workmen; in its centre it has an iron ring attached, very rusty from age. Charcoal and some ashes filled up the cavity, which also contained two small flat bottles, one larger than the other, both empty, and without corks. The cavity lies in solid chalk, and cannot have been disturbed for a long period of time. It appeared to have been filled before closure full of live coals. No drain of any kind is in the neighbourhood of it.

London Cabmen's Mission-hall. — The foundation-stone of a new hall at King's-cross, Mr. Arthur Allom, architect, has been laid, adjoining to the Metropolitan Railway Station, by Mr. Samuel Morley, M.P., who contributed 50*l.* on the occasion. Many cabmen and their wives also contributed, and 100*l.* in all were collected. The new hall is to be devoted to preaching, Bible classes, prayer and temperance meetings, lectures, and a Sunday school. It is estimated that the hall will cost about 1,600*l.*, and as the work of the Mission is carried on by means of public support, an urgent appeal is made to the benevolent for help. The treasurer is Mr. W. Percy, of 35, Euston-road.

London Anthropological Society.—On the 9th inst. the first ordinary general meeting of the London Anthropological Society, which was inaugurated last January, was held at the rooms of the Social Science Association, Adam-street, Adelphi. The president (Dr. R. S. Charnock, F.S.A.), in his opening address, spoke at great length on the objects of this newly-formed society, and what gave rise to its formation, touching on the disputes between the anthropologists and the ethnologists. Thanks having been accorded to the president for his address, Dr. Inman read a paper "On certain Ancient Temples in Malta."

The Avonmouth Docks.—It is stated that a definite undertaking has been entered into by a number of capitalists to provide the money necessary to finish the Avonmouth Docks. A proposition was made to the Midland and Great Western Companies to contribute each 25,000*l.* towards the work. The companies have, however, received an intimation that no subscription from them will now be necessary. It is not unlikely, therefore, that the docks for ocean steamers on either side of the river may be finished and opened contemporaneously.

Manchester Conservative Club.—Mr. Robert Walker has been appointed architect to the Manchester Conservative Club. In consequence of notice having been given by the corporation to take part of the site for the purpose of widening St. Ann's-street, the plan and elevation of the building will have to be thoroughly reconsidered, under these circumstances.

"Sicker Safe" for Exhibition Commissioners.—Mr. J. F. Elwell, of Birmingham, is constructing one of his newly-invented "Sicker" (or sure) safes, of great strength and size, for the International Exhibition Commissioners. The safe will be prominently shown in the Exhibition, but it will not be sent there as "an exhibit."

"The Bridestones," Pickering. — The singularly placed glacial boulders, near Pickering, invested with a Druidical reputation, have changed hands. The estate upon which they stand has just been sold at Pickering. It consisted of 59 acres of cultivated land, and 219 acres of moor, on which stand the Bridestones, fringing two of the most romantic valleys of North Yorkshire. The last bid, by Mr. Frobisher, a West Riding gentleman, was 3,400*l.*

Co-operation in the Building Trade.—The operatives on strike in the building trade at Leamington have united to carry out co-operation in building, and have issued the prospectus of the Leamington United Trades Building Company, and invite public patronage and support. They state that they are prepared to undertake every description of building, and to execute work in every branch of the trade, and assert that they have the choice of the most skilled artisans in every branch.

Exhibitions.—The private view of the Society of Painters in Water Colours, and that of the Institute of Painters in Water Colours, will take place on Saturday, the 26th inst. The private view of the Royal Academy Exhibition will be given on Friday, May 2nd, the exhibition being opened to the public on the following Monday, as usual. The Royal Manchester Institution Exhibition of Water Colour Drawings will be opened to the public on Monday, April 21.

Proposed new College at Cambridge.—The designs for a new county college which it is proposed to erect in Cambridge, at a cost of 25,000*l.* or 30,000*l.*, represent an imposing pile of buildings. It is understood that a very eligible property called the Leys, on Trumpington-road, nearly opposite the Botanical Garden, recently purchased with a view of establishing a Wesleyan College, has been secured for the erection of the county college.

Testimonial to an Engineer.—Mr. H. W. Davis, C.E., in retiring from the position of engineer-in-chief to the Great Eastern Railway, to which company he has been professionally attached for twenty-five years, has been presented with a service of plate by his brother officers, and upwards of 1,500 workmen on the line. Mr. Davis has commenced business in the City on his own account as a civil engineer.

The New Organ for Gloucester Cathedral will be placed on the screen. The Dean and Chapter have entrusted the work to Messrs. Bryceson & Co., of London, and the instrument will be specially arranged so as to conduct either choir or nave service.

TENDERS

For parochial schools at Blunham, Beds. Mr. John Usher, architect. Quantities supplied:—

Foster	£1,406 0 0
Wright & Goodchild	1,387 15 0
Coles	1,386 0 0
Richards, jun.	1,335 0 0
Cunvin	1,315 0 0
Hobson & Taylor	1,297 0 0
Spencer	1,297 0 0
Dunham	1,250 0 0
Hull	1,240 0 0
Edey	1,210 10 0
Richards, sen.	1,196 6 0
Howe	1,152 16 0

For farm homestead, for Messrs. J. & F. Howard. Mr. John Usher, architect. Quantities supplied:—

Coles	£2,456 0 0
Wright & Goodchild	2,345 0 0
Hull	2,179 0 0
Dover & Co.	2,167 0 0
Foster	2,137 10 0
Potter	2,110 0 0
Spencer	2,068 0 0

For farmhouse and offices, for Messrs. J. & F. Howard. Mr. John Usher, architect. Quantities supplied:—

Coles	£1,447 0 0
Foster	1,387 0 0
Wright & Goodchild	1,265 15 0
Spencer	1,265 0 0
Dover & Co.	1,239 19 0
Potter	1,230 0 0
Hull	1,228 0 0

For the above farmhouse and homestead together:—

Hobson & Taylor	£3,648 0 0
Claridge	3,445 0 0

For sundry alterations, repairs, and decorations, 37, Stamford-street, Blackfriars. Mr. J. D. Hayton, architect:—

Beguley	£500 0 0
Bulford	561 0 0
Johnson	547 0 0
Tenfield	530 0 0
Wilkes, Bros.	519 0 0
Welham	408 17 3
Dudman	380 0 0
Pitcher (accepted)	349 0 0

For the erection of a villa at Leytonstone, Essex, for Mr. P. T. Lironi. Quantities supplied. Mr. William Mundy, architect:—

Rivett	£1,789 0 0
King & Sons	1,780 0 0
Brown	1,750 0 0
Smith	1,687 0 0
Ennor	1,684 0 0
Chapman	1,660 0 0
Forrest	1,631 0 0
Arber (accepted)	1,575 0 0

For the erection of five cottages at Chislehurst, Kent, for Mr. Edwards. Mr. William Mundy, architect:—

Grover	£1,064 0 0
Hampshire	1,038 0 0
Wentome (accepted)	750 0 0

For house at Croydon, Surrey. Mr. Richard Martin, architect. Quantities supplied by Mr. F. Sparrow:—

Bridgman, Nuthall, & West	£2,949 0 0
Ward	2,736 0 0
Jarrett	2,732 0 0
Hyde	2,712 0 0
Waller	2,637 0 0
Wright, Bros., & Goodchild	2,415 0 0

For Brecon Priory Church. Sir G. Gilbert Scott, R.A., architect:—

	Nave.	North Aisle.	South Aisle.
Williams	£2,740 0	£1,080 0	£600 0
Wood & Son	2,605 0	1,041 0	591 0
Coleman	2,500 0	1,075 0	620 0
T. Williams	2,260 0	1,105 0	582 5
Collins & Cullis*	1,675 0	750 0	515 0

* Accepted.

For alterations, repairs, and decorations to premises, No. 98, Gloucester-place, Portman-square. Messrs. Bird & Walters, architects. Quantities supplied:—

Newman & Mann	£1,890 0 0
Harris & Sons	1,877 0 0
McLachlan	1,809 0 0
Mark	1,847 0 0
Henshaw & Co.	1,827 0 0
Brown	1,795 0 0
Ebbs & Sons	1,770 0 0
Williams & Son	1,767 0 0
Hill & Sons (accepted)	1,740 0 0

For conservatory and garden-wall, for Mr. R. Russell. Plans and specification by Mr. J. F. Mathews. Quantities not supplied:—

Hall	£349 0 0
Cook	339 0 0
Waycott	339 0 0
Holdsworth	307 0 0

For building four houses in Grayton-road, Hampstead. Mr. Frederick Sparrow, architect. Quantities not supplied:—

Brown	£3,497 0 0!
Stephens	3,390 0 0
Thompson & Smith	2,533 0 0
Bridgman, Nuthall, & West	2,399 0 0
Edgar	2,335 0 0
Temple & Forster (accepted)	2,188 0 0
Till	1,947 0 0!

For alterations and new shop front to 30, Buckingham Palace-road, for Mr. Lucas:—

Wagner (accepted)	£250 0 0

Methodist Free Church and School, Vauxhall Bridge-road. Mr. W. Ranger, architect:—

Pinnell & Son	£1,960 0 0
Haynes	1,637 0 0
Smith & Allder	1,577 0 0
Burrows & Brooker	1,530 0 0
Booker	1,505 0 0
Richards	1,421 0 0
Richardson, Bros. (accepted)	1,318 0 0

For repairs to external stone and other work to Holy Trinity Church, Southwark, Surrey. Messrs. Jarvis & Son, architects:—

Reeves	£1,080 0 0
Miller	1,052 0 0
Henshaw & Co.	620 0 0
Shepherd	000 0 0

For erecting boarding-house, Charterhouse Schools, Godalming, for Rev. James F. Hodgson. Mr. C. J. Hayward, architect. Quantities by Mr. Morris Evans:—

Pink	£6,997 0 0
Dove	6,845 0 0
Stimpson & Co.	6,780 0 0
Carruthers	6,246 0 0
Putney	6,168 0 0

For repairs to 121 and 123, Clarendon-road, Notting-hill, for Mr. Geo. Wadley. Messrs. Bird & Walters, architects. Quantities supplied:—

Harris & Sons	£117 0 0
Williams	108 0 0
Parkes	105 0 0

For the erection of new schools, High-street, Stratford, for the West Ham School Board. Mr. J. T. Newman, architect. Quantities by Messrs. R. L. Curtis & Son:—

Atherton & Latta	£6,040 0 0
Abraham	5,972 0 0
Gregar	5,950 0 0
Niblett & Son	5,910 0 0
Pavitt	5,873 0 0
Warr	5,825 0 0
King & Son	5,791 0 0
Wicks, Bangs, & Co.	5,694 0 0
Rivett	5,678 0 0
Hoskings	5,597 0 0
Webber (accepted)	5,441 0 0
Marshall	5,397 0 0

For new printing-office and alterations to premises, Silver-street, Bedford. Mr. John Usher, architect:—

Corby & Son	£203 0 0
Richards, jun.	201 1 0
Cunvin	171 0 0